



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III

FINAL DECISION AND RESPONSE TO COMMENTS

MAX ENVIRONMENTAL TECHNOLOGIES, INC.
YUKON, PENNSYLVANIA

EPA ID NO. PAD004835146

I. FINAL DECISION

In this Final Decision and Response to Comments (Final Decision), the United States Environmental Protection Agency (EPA) selects the following two components as the Final Remedy for the MAX Environmental Technologies, Inc. (MAX) facility (the Facility), located at 233 Max Lane in Yukon, Pennsylvania:

1. Permit Compliance – MAX shall continue to comply with the terms and conditions of the Pennsylvania Department of Environmental Protection (PADEP) Hazardous Waste Permit No ID # PAD004835146 and PADEP Solid Waste Permit No. 301071 issued by PADEP (formerly the Pennsylvania Department of Environmental Resources), including reporting to PADEP any releases or potential releases of hazardous waste or solid waste from the Facility that may endanger public drinking water supplies or otherwise threaten human health or the environment.
2. Residential Water Supply Well Monitoring – In addition to the sampling parameters specified in Appendix A, page ix (Residential Water Supply Wells) of the PADEP Solid Waste Permit No. 301071, MAX shall analyze the residential well water for the following: arsenic, barium, cadmium, fluoride, iron, lead, manganese, nickel, selenium, silver, ammonia, and sulfate. These additional analytes are based on the contaminants of potential concern in Disposal Area 6 leachate. If EPA determines that additional corrective measures are necessary to protect human health and/or the environment from contaminants that remain in the groundwater above drinking water standards and that are attributable to releases from the Facility, EPA will solicit public comments on any such additional corrective measures prior to amending the Final Decision and including them in the Final Remedy for the Facility.

The Final Remedy is based on EPA's findings as detailed in the Statement of Basis (SB), which EPA issued for the Facility on August 17, 2020, and is consistent with EPA's February 2003 *Final Guidance on Completion of Corrective Action Activities at RCRA Facilities* (68 FR 8757).

EPA's Final Remedy, as selected in this Final Decision, is implemented through EPA Corrective Action Permit PAD004835146.

If the owner and/or operator of the Facility fail to meet their/its obligations or EPA, in its sole discretion, deems that additional activities and/or controls are necessary to protect human health or the environment, EPA has the authority to require and enforce additional corrective actions consistent with public participation provisions under the Resource Conservation and Recovery Act (RCRA).

II. PUBLIC COMMENT PERIOD

On August 17, 2020, EPA issued a SB in which it announced its proposed remedy for the Facility. Consistent with public participation requirements under RCRA, EPA

requested comments from the public on the proposed remedy. The commencement of a forty-five (45)-day public comment period was announced in the *Trib Total Media* on August 26, 2020 and on the EPA Region III website. The public comment period was subsequently extended to November 19, 2020 via an additional announcement on the EPA website and in the *Trib Total Media* on October 10, 2020. The public comment period ended on November 19, 2020.

III. RESPONSE TO COMMENTS

EPA received two comments on the proposed remedy described in the SB. The comments in their entirety are provided in Attachment B of this document, and EPA's response to public comments is provided in Attachment C. Each comment is summarized and followed by EPA's response. EPA made a minor change to the proposed remedy based on the comments received. No significant change from the proposed remedy was made. Therefore, the remedy proposed in the SB is the Final Remedy selected by EPA for the Facility. The SB for the Facility is incorporated herein and made a part hereof as Attachment A.

IV. AUTHORITY

EPA is issuing this Final Decision under the authority of the Solid Waste Disposal Act, as amended by RCRA, and the Hazardous and Solid Waste Amendments (HSWA) of 1984, 42 U.S.C. Sections 6901 to 6992k.

V. DECLARATION

Based on the Administrative Record compiled for the Corrective Action at the Facility, EPA has determined that the Final Remedy selected in this Final Decision is protective of human health and the environment.

Stacie Driscoll, Acting Director
Land, Chemicals, and Redevelopment Division
U.S. EPA Region III

1/28/2021
Date

Attachment A: Statement of Basis, August 2020
Attachment B: Public Comments
Attachment C: Response to Comments

ATTACHMENT A
STATEMENT OF BASIS



UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION III

STATEMENT OF BASIS

MAX ENVIRONMENTAL TECHNOLOGIES, INC.
YUKON FACILITY
233 MAX LANE
YUKON, PENNSYLVANIA

EPA ID NO. PAD 004 835 146

Prepared by
RCRA Corrective Action Program
Land, Chemicals and Redevelopment Division
August 2020

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List of Acronyms

EPA	Environmental Protection Agency
COA	Consent Order and Agreement
COPC	Constituent of Potential Concern
Final Decision	Final Decision Response to Comments
MAX	MAX Environmental Technologies, Inc.
MCL	National Primary Drinking Water Standard Maximum Contaminant Level
PADEP	Pennsylvania Department of Environmental Protection
RCRA	Resource Conservation and Recovery Act
RSL	EPA Region III Screening Level for tap water

List of Figures

Figure 1: Facility Location

Figure 2: Facility Layout

Section 1: Introduction

The United States Environmental Protection Agency (EPA) has prepared this Statement of Basis to solicit public comment on its proposed remedy for the MAX Environmental Technologies, Inc. (MAX) Yukon Facility, located in Yukon, Pennsylvania (hereinafter referred to as MAX Yukon or the Facility).

EPA believes the cleanup actions MAX has implemented under Pennsylvania Department of Environmental Protection (PADEP) oversight at the Facility, which EPA proposes MAX continue to implement as described further in this Statement of Basis, will satisfy MAX's corrective action obligations under RCRA.

Therefore, EPA's proposed remedy for the Facility consists of the following components:

1. Continued compliance with the terms and conditions of the PADEP Hazardous Waste Permit No ID # PAD004835146 (Hazardous Waste Permit) and PADEP Solid Waste Permit No. 301071 (Solid Waste Permit) (together, the Permits); issued by PADEP (formerly the Pennsylvania Department of Environmental Resources), and
2. Additional monitoring of residential water supply wells adjacent to Disposal Area 6 for parameters related to that disposal area.

This Statement of Basis highlights key information relied upon by EPA in proposing its remedy for the Facility.

The Facility is subject to EPA's Corrective Action program under the Solid Waste Disposal Act, as amended, commonly referred to as the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. § 6901 et seq. The Corrective Action program requires that facilities subject to certain provisions of RCRA investigate and address releases of hazardous waste and hazardous constituents, usually in the form of soil or groundwater contamination, that have occurred at or from their properties. The Commonwealth of Pennsylvania is not authorized for the Corrective Action Program under Section 3006 of RCRA. Therefore, EPA retains primary authority in the Commonwealth of Pennsylvania for the Corrective Action Program.

EPA is providing a forty-five (45) day public comment period on this Statement of Basis. EPA may modify its proposed remedy based on comments received during this period. EPA will announce its selection of a final remedy for the Facility in a Final Decision and Response to Comments (Final Decision) after the public comment period has ended. Concurrently with this Statement of Basis, EPA is soliciting comments on a draft federal permit to be issued under Section 3004(u) of RCRA, 42 U.S.C. § 6924. The draft federal permit incorporates the Facility's PADEP Permits.

Information on the Corrective Action program as well as a fact sheet for the Facility can be found by navigating to: <https://www.epa.gov/hwcorrectiveactionsites/hazardous-waste-cleanup-max-environmental-technologies-incorporated-1>.

The Administrative Record for the Facility contains all documents, including data and quality

assurance information, on which EPA's proposed remedy is based. See Section 8, Public Participation, below, for information on how you may review the Administrative Record.

Section 2: Facility Background

The Facility is located approximately 30 miles southeast of Pittsburgh, PA, in South Huntingdon Township, Westmoreland County, Pennsylvania. The Facility is surrounded by agricultural, wooded and residential properties. Waste operations are permitted on 137 acres of the 160-acre Facility. (see Figure 1, Facility Location)

The Facility is currently owned by MAX which operates it as a treatment and disposal facility for hazardous and residual waste. The Facility was formerly owned by Mill Service, Inc., and began operations in 1964 in the location of a former strip mine. In 2002, Mill Service, Inc. changed its corporate name to MAX Environmental Technologies, Inc. The Facility has operated under Permits and Consent Order and Agreements (COAs) that directed the disposal operations, unit closures, environmental investigations, and environmental remediation at the Facility. The Facility currently operates under the Permits and two COA; ENF ID NO 346585S, and ENF ID NO 347065S, both of which were issued by PADEP on September 21, 2016.

The Facility initially accepted acids and other inorganic wastes from steel and glass manufacturing, electroplating, and other industries. The wastes were treated with lime to neutralize the acids and immobilize metals. The treated slurry was then placed in disposal impoundments. Historically, the largest volume wastes processed and disposed at the Facility were K061 (electric arc furnace dust) and K062 (spent pickle liquor). Since the 1990's, the wastes received at the Facility for treatment and disposal are primarily solids, including slag, electric arc furnace dust, metal-impacted soils, and drill cuttings from the oil and gas industry.

The Facility currently operates under the following Permits:

- The Solid Waste Permit authorizes the disposal of residual waste in Disposal Area 6 (formerly Impoundment 6). A major permit modification was issued in September 2016. The modification permits the vertical expansion of the active residual waste landfill, Disposal Area 6. The Solid Waste Permit also specifies the Facility-wide monitoring requirements and requires the submission of an annual evaluation of all groundwater and surface sampling and analysis.
- The Hazardous Waste Permit authorizes the storage and treatment of inorganic hazardous waste. The Facility is operating under an administrative extension to the permit issued in February 2005. The extension was granted while MAX implements the leachate management and delisting requirements of the COAs executed in September 2016.

Waste management units at the Facility include five closed impoundments, an active landfill, waste storage tanks and containers, waste treatment tanks, and a leachate management-wastewater treatment system. The waste management units and monitoring locations are depicted on Figure 2, Facility Layout, and are further described as follows.

Closed Disposal and Storage Impoundments

- Impoundments 1, 2, and 3: The three adjacent disposal impoundments collectively cover approximately 12 acres. The unlined impoundments operated from 1963 to 1978, prior to RCRA regulatory requirements. They received treated industrial waste, primarily waste acids from steelmaking. They were closed with waste left in place.
- Impoundment 4: The lined leachate management impoundment operated from 1978 through 1984, when it was replaced with aboveground storage tanks. It was clean-closed in 1986 by removing waste and subsoil and placing the material in Impoundment 5.
- Impoundment 5: The 13.5-acre hazardous waste disposal impoundment was constructed with a bentonite-clay liner and a leachate collection system, which consists of an underdrain layer and a perimeter collection system. It operated under interim status from 1978 until 1985, but a RCRA permit was never issued to the unit. MAX capped and closed the impoundment in 2002 in accordance with RCRA closure requirements.

Active Landfill

- Disposal Area 6, also known as Landfill 6, is an active residual waste landfill unit opened in 1988. It covers approximately 16.5 acres. It is constructed with a double liner, a leachate collection system, and a leak detection system. The Solid Waste Permit requires the disposal area to be capped within one year of final waste placement.

Waste Treatment and Storage Units

- Hazardous and residual wastes are chemically and physically treated in tanks to render them non-hazardous. Treatment processes include neutralization/precipitation, chemical reduction/oxidation, oil separation, solidification, and dewatering. Waste is stored in approved tanks, containers, and a containment building prior to and after treatment. Treated, non-hazardous waste is placed in Disposal Area 6 or disposed off-site.

Leachate Management/Wastewater Treatment System

- Leachate from the treatment and disposal units, contact surface water, and contaminated groundwater are treated at the Facility's wastewater treatment plant. The effluent is discharged to Sewickley Creek under NPDES Permit No. PA0027715.
- The sludge generated at the plant was previously disposed in Disposal Area 6 as a residual waste. In 2011, EPA determined that the sludge should be classified as a listed hazardous waste (FO39). The sludge is currently being managed and taken off-site as a listed hazardous waste until it is specifically delisted by PADEP. MAX submitted a delisting petition for the sludge to PADEP and the PA Environmental Quality Board on May 30, 2018, in compliance with the September 2016 COA between PADEP and MAX, which is under review.

Section 3: Environmental Investigations and Corrective Action

Environmental Investigations

Several hydrogeological investigations have been performed to characterize the geological, hydrogeological, and mining conditions at the Facility. Three groundwater flow zones are monitored: Redstone Coal, Pittsburgh Coal, and Pittsburgh Limestone. The Redstone Coal outcrops at the edge of Impoundments 1-3. It is not present under the other disposal units. The Pittsburgh Coal zone was removed from the Disposal Area 6 location by strip mining of the coal. Only the Pittsburgh Limestone is continuous beneath the Facility. Groundwater flows to the northwest in all three zones.

In the mid-1980's, PADEP-approved groundwater investigations showed that releases from the impoundments impacted the Redstone Coal zone and Pittsburgh Coal zone. The mine water was contaminated by the salts from the disposal of treated spent pickle liquor: chloride, nitrate, and sulfate. MAX was then required by PADEP to close Impoundments 1, 2, and 3; clean-close Impoundment 4; close Impoundment 5; and implement a groundwater remediation and monitoring system.

Current Monitoring Program

Currently, the Facility Wide Monitoring Program incorporates the closed impoundments and Disposal Area 6. The monitoring locations are identified in Figure 2, Facility Layout.

The monitoring requirements are specified in Appendix A of the Solid Waste Permit and the Facility Wide Monitoring Plan (Cribbs and Associates, Inc., 2013). The requirements include sampling of:

- groundwater at 26 wells in the three flow zones: Redstone Coal, Pittsburgh Coal, and Pittsburgh Limestone;
- groundwater at three private wells, located upgradient and side gradient of Disposal Area 6, that draw water from the Pittsburgh Limestone zone;
- surface water at 7 locations;
- one spring at the south embankment of Disposal Area 6; and
- sixteen leachate and seep management locations.

Sample analysis includes metals, calcium, ammonia-nitrogen, chloride, nitrate, sulfate, cyanide, volatile organic compounds, and phenols. The required analysis for each sampling point is based on the waste material managed in the sample area and an assessment of past sampling results. Chloride and nitrate are established as indicator parameters for release detection because they are primary contaminants associated with the disposal impoundments, and they are not associated with past coal mining impacts. All sample locations are analyzed for these indicator parameters.

Three residential wells, located approximately 200 foot to 300 feet from the perimeter of Disposal Area 6, are analyzed for chloride, nitrogen, and organic compounds. They are not analyzed for all parameters associated with Disposal Area 6.

As part of an investigation for proposed Landfill 7, MAX installed 13 monitoring wells in 2018 in the northern portion of the Facility near Sewickley Creek. The wells are screened to monitor the water table (if present above the Pittsburgh Coal horizon), Pittsburgh Coal horizon, and Pittsburgh Limestone.

Monitoring Assessment

In July 2020, MAX submitted a revised Facility-Wide Groundwater Assessment Report (2020 Assessment Report), including an evaluation of water quality from January 2015 through January 2020.

An evaluation of the most recent 8 quarters of monitoring data shows the following environmental conditions.

Groundwater - The following contaminants were detected above the EPA Drinking Water Standards: the National Primary Drinking Water Standard Maximum Contaminant Levels (MCLs) promulgated pursuant to Section 42 U.S.C. §§ 300f et seq. of the Safe Drinking Water Act and codified at 40 CFR Part 141, or EPA Region III Screening Levels (RSLs) for tap water, if there is no MCL for a contaminant.

Redstone Coal Groundwater Flow Zone

Only barium was detected above the EPA Drinking Water Standards. Barium exceeded the MCL of 2 mg/l in well, RC-2. Barium was detected at concentrations up to 4.62. It was not detected above the MCL in either of the downgradient Point-of-Compliance wells, RC-6A and W-2.

Pittsburgh Coal Groundwater Flow Zone

Manganese and nitrate were detected above the EPA Drinking Water Standards.

- Nitrate exceeded the MCL of 10 mg/l in two wells. Well PC-3 contained concentrations from 4.2 mg/l to 36.3 mg/l. Well SP-3, located within mine spoil backfill, contained concentrations from 4.2 mg/l to 34.8 mg/l.
- Manganese exceeded the RSL of 0.43 mg/l in 2 wells. Well PC-3 contained concentrations from 2.05 mg/l to 8.21 mg/l. Well PC-1 contained concentrations from 1.26 mg/l to 2.21 mg/l.

The Pittsburgh Coal zone is extensively deep mined beneath the Facility and the surrounding area. The groundwater is severely degraded by the past mining activities. It is not suitable for potable water use, with pH values as low as 3 S.U.

Pittsburgh Limestone Groundwater Flow Zone

Only fluoride was detected above the EPA Drinking Water Standards. Fluoride exceeded the MCL of 4 mg/l in 4 wells: W-4, W-5, W-10, and W-13. Concentrations in these wells ranged from 0.34 mg/l to 8.9 mg/l. An assessment of the aquifer characteristics indicates that the elevated fluoride may be originating from fluoride-bearing minerals in the limestone rock, with higher alkalinity groundwater areas showing higher concentrations of fluoride. Wells located along the downgradient property line, W-6, MW-702LS, and MW-704LS, show no fluoride concentrations above the MCL.

There were no exceedances of Drinking Water Standards in the three domestic water wells monitored.

Surface Water – Surface water is monitored at 7 locations for nitrate and chloride, as parameters that indicate a release may be occurring. No samples showed concentrations above the Drinking Waste Standards or Pennsylvania Surface Water Quality Standards.

Corrective Actions

Impoundments 1, 2, and 3: The disposal impoundments were closed in the late 1970's with a compacted soil covers, approximately three to five feet thick. In the mid-1980's, PADEP determined that the covers were not effectively containing contaminants from the waste material. Under the direction of PADEP, MAX reclosed the impoundments by rebuilding the surface grading with residual waste, then installing a low-permeable cap on each unit to seal off precipitation infiltration. Impoundments 1 and 2 were reclosed and capped as one unit. Final closure was completed in 2013. PADEP determined that these actions effectively remediated the Redstone Coal zone. The point-of compliance wells show no contamination above the Drinking Water Standards.

Impoundments 4: Impoundment 4 was clean-closed in 1989 under PADEP oversight by excavating all accumulated waste material, PVC liner, dyke walls, and two feet (minimum) of subsoils. All the excavated material was deposited into Impoundment 5 prior to closure of that impoundment.

Impoundment 5: Impoundment 5 stopped operation in 1985. Cover material was placed over the waste surface, and the surface was monitored for settlement from consolidation of the waste in the impoundment. Due to continuing consolidation, PADEP allowed MAX to regrade the surface of the impoundment with residual waste to assure long-term positive drainage prior to final capping. A RCRA cap was then installed over the entire disposal area. Closure was completed with PADEP approval in 2002.

Groundwater Remediation: The pump and treat groundwater remediation system, which has been operating for over 25 years, has removed impacted groundwater from the Pittsburgh Coal flow zone. Accumulated coal mine water is withdrawn from pumping wells and conveyed to the on-site wastewater treatment plant. Only one of three pumping wells, PW-1, still produces enough water to pump. A time-trend analysis of groundwater over time (2007 through 2017) shows that water quality in the Pittsburgh Coal zone continues to improve over time.

Leachate Management: As required by the 2016 COA, ID# 347065S, and the Solid Waste Permit, MAX constructed leachate collection and storage system improvements for Disposal Area 6. Construction was completed between April 2017 and May 2018. System improvements included construction of:

- subbase for a new storage tank, including subsurface mine void stabilization;
- leachate storage tank for additional storage capacity (approximately 1.2 million gallons);

- leachate transmission lines from the landfill to the new storage tank, and between the new and existing storage tanks; and
- lined leachate collection trench around the interior perimeter of the landfill.

Section 4: Corrective Action Objectives

Soil: The Corrective Action Objective for soil is to prevent unacceptable exposure to human health and the environment from any hazardous constituents remaining in the soil.

EPA proposes this objective be achieved through protective caps. Except for Disposal Area 6, all contaminated material is already contained within a capped containment structure. Disposal Area 6 is an active landfill. The Solid Waste Permit requires placement of cover material over exposed waste at the end of every business day. It also requires final capping of the entire disposal area within one year of final waste placement.

- Impoundments 1, 2, 3, and 5 existing caps over the waste disposal areas and cap maintenance, required under the Solid Waste Permit, will achieve this objective.
- For Disposal Area 6, this objective will be achieved by meeting the Solid Waste Permit requirement to cap the disposal area within one year of final waste placement.

Groundwater: EPA expects final remedies to return groundwater to its maximum beneficial use within a timeframe that is reasonable given the particular circumstances of the project. For projects where aquifers are either currently used for water supply or have the potential to be used for water supply, EPA will use the National Primary Drinking Water Standard Maximum Contaminant Levels promulgated pursuant to Section 42 U.S.C. §§ 300f et seq. of the Safe Drinking Water Act and codified at 40 C.F.R. Part 141.

Ongoing groundwater monitoring shows sporadic exceedances of the Drinking Water Standards.

- The Redstone Coal flow zone meets Drinking Water Standards at the point of compliance wells.
- The Pittsburgh Coal flow zone contains manganese and nitrate above Drinking Water Standards at the point of compliance well PC-3. However, the aquifer is not suitable for potable water use due to degradation from past coal mining in the region. In addition, remediation of the aquifer continues under the pump and treat system required by PADEP.
- The Pittsburgh Limestone flow zone contains areas of fluoride concentrations that are up to twice the MCL of 4 mg/l. However, the 3 wells located along the downgradient property line, W-6, MW-702LS, and MW-704LS, show no fluoride concentrations above the MCL.
- The three residential well that are located within 300 feet of Disposal Area 6 are not monitored for the complete set of constituents related to the disposal area. The proposed remedy requires monitoring of the residential wells to include all the potential COPCs for Disposal Area 6, including fluoride.

The Corrective Action Objective for groundwater is to prevent unacceptable exposure to human health and the environment from contaminated groundwater. EPA proposes this objective be achieved by:

- compliance with the Permits, and
- monitoring of the residential wells for all COPCs for Disposal Area 6.

Surface Water: The Corrective Action Objective for surface water is to prevent the migration of contaminants to surrounding surface water at concentrations that may exceed Surface Water Quality Criteria.

Ongoing stream sampling shows no existing contamination. Ongoing monitoring as required by the Permits will ensure this objective continues to be achieved.

Section 5: Proposed Remedy

EPA’s proposed remedy for the Facility consists of the following components.

1. Permit Compliance – MAX shall continue to comply with the terms and conditions of the Permits, including reporting to PADEP any releases or potential releases of hazardous waste from the Facility that may endanger public drinking water supplies or otherwise threaten human health or the environment.
2. Residential Water Supply Well Monitoring – In addition to the sampling parameters specified in Appendix A, page ix (Residential Water Supply Wells), of the 2016 Solid Waste Permit, MAX shall analyze the residential well water for the following: arsenic, barium, cadmium, fluoride, iron, lead, manganese, nickle, selenium, silver, ammonia, and sulfate. These additional analytes are based on the COPCs in Disposal Area 6 leachate. If EPA believes that additional corrective measures are necessary to protect human health and/or the environment from contaminants that remain in the groundwater above drinking water standards and that are attributable to releases from the Facility, EPA will solicit public comments on any such additional corrective measures prior to amending the FDRTC and including them in the final remedy for the Facility.

Section 6: Evaluation of Proposed Remedy

This section provides a description of the criteria EPA used to evaluate the proposed remedy consistent with EPA guidance. The criteria are applied in two phases. In the first phase, EPA evaluates three decision threshold criteria as general goals. In the second phase, for those remedies which meet the threshold criteria, EPA then evaluates seven balancing criteria.

Threshold Criteria	Evaluation
1) Protect human health and the environment	The primary human health and environmental threats posed by the disposal areas are related to direct contact with the waste and

	contamination remaining in place as well as any hazardous constituents leaching to the groundwater. These threats have been mitigated by the monitoring and closure activities required by PADEP under the Permits and the COAs.
2) Achieve media cleanup objectives	Media cleanup objectives were achieved and will continue to be achieved by consolidating, stabilizing, and capping the waste material.
3) Remediating the Source of Releases	Remediation of source areas was achieved by consolidating, stabilizing, and capping the waste material. In addition, groundwater monitoring and site inspections continue under the Permits to detect any releases that may occur in the future.

Balancing Criteria	Evaluation
4) Long-term effectiveness	Facility use restrictions under the Permits will maintain protection of human health and the environment over time by controlling exposure to contaminated waste and soil.
5) Reduction of toxicity, mobility, or volume of the Hazardous Constituents	Reduction of toxicity, mobility, or volume of hazardous constituents has already been achieved, as demonstrated by the data from the groundwater monitoring.
6) Short-term effectiveness	EPA's proposed remedy does not involve any activities, such as construction or excavation that would pose short-term risks to workers, residents, and the environment.
7) Implementability	EPA's proposed remedy is readily implementable. EPA does not anticipate any regulatory constraints in requiring the Facility property owners to continue compliance with the Permits and the COAs and to increase groundwater analysis at the residential wells.
8) Cost	The proposed remedy is cost effective. The cost of increasing groundwater analysis at the residential wells will be minimal.
9) Community Acceptance	EPA will evaluate community acceptance during the public comment period and provide an analysis in the Final Decision.
10) State/Support Agency Acceptance	EPA will evaluate state acceptance during the public comment period and provide an analysis in the Final Decision.

Overall, based on the evaluation criteria, EPA has determined the proposed remedy meets the threshold criteria and provides the best balance of tradeoffs with respect to the evaluation criteria.

Section 7: Financial Assurance

EPA has evaluated whether financial assurance for corrective action is necessary to implement EPA's proposed remedy at the Facility. PADEP requires financial assurance in accordance with the Permits. EPA has determined that additional financial assurance is not required.

Section 8: Public Participation

Interested persons are invited to comment on EPA's proposed remedy. The public comment period will last forty-five (45) calendar days from the date that notice is published in a local newspaper. Comments may be submitted by mail, or electronic mail to Maureen Essenthier at the contact information listed below.

A public meeting will be held upon request. A meeting will not be scheduled unless one is requested.

The Administrative Record contains all the information considered by EPA for the proposed remedy at this Facility. The Administrative Record is available at the following location:

U.S. EPA Region III
1650 Arch Street
Philadelphia, PA 19103
Contact: Maureen Essenthier (3LD20)
Phone: (215) 814-3416
Email: essenthier.maureen@epa.gov

Section 9: Signature

Date: 8/17/20



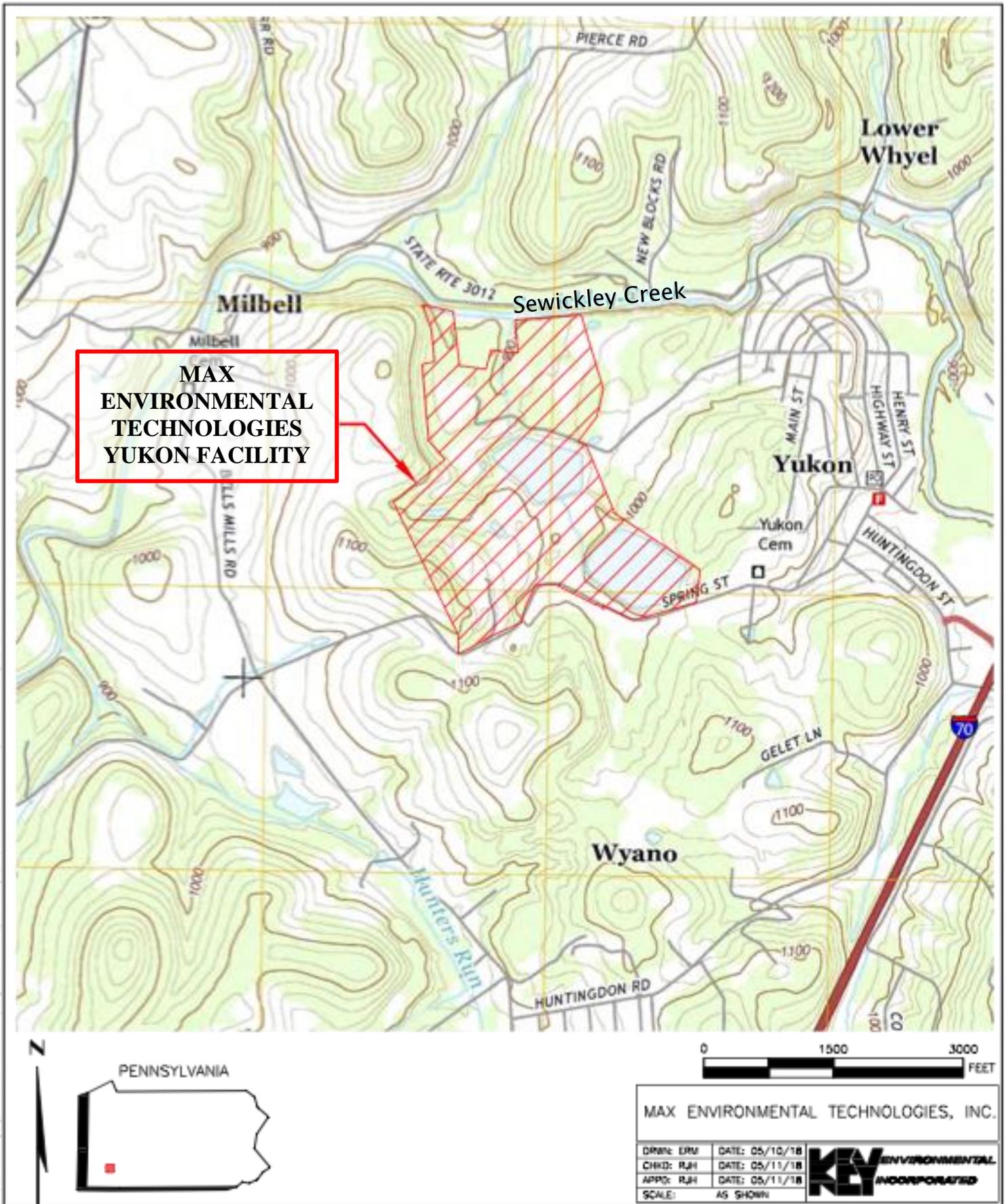
John A. Armstead, Director
Land, Chemicals and Redevelopment Division
US EPA, Region III

Attachments

- Figure 1 - Facility Location
- Figure 2 - Facility Layout

Section 10: Index to Administrative Record

1. Facility-Wide Groundwater Assessment Report, CEC for MAX, July 2020
2. MAX response to 1-7-2020 GW request, MAX email dated 2-5-2020
3. Groundwater Analysis Summary, 3rd Quarter 2017 through 2nd Quarter 2019, MAX
4. 3rd Quarter 2018 Groundwater Sampling, MAX, dated October 2018
5. Construction Certification Documents, September 2016 COA Related, CEC for MAX, October 2016 through May 2018
6. MAX Yukon Facility, F039 delisting petition, Key Environmental Inc, for MAX, dated May 30, 2018
7. First Amendment to FO39 Consent Order and Agreement, PADEP and MAX Environmental Technologies, dated March 28, 2018
8. Groundwater Time-Trend Plots, MAX, 2007 through 2017
9. Consent Order and Agreement (FO39, ENF ID NO 346585S), PADEP and MAX Environmental Technologies, dated September 21, 2016
10. Consent Order and Agreement (ENF ID NO 347065S), PADEP and MAX Environmental Technologies, dated September 21, 2016
11. PADEP Solid Waste Permit No 301071 (Residual Waste Disposal), issued 9/21/2016
12. MAX Environmental Technologies Fact sheet dated July 2014
13. Facility Wide Groundwater Monitoring Plan, Cribbs and Associates, Inc. for MAX. dated 2013
14. MAX Environmental Technologies Response to Request for information dated August 15, 2013
15. PADEP Hazardous Waste Permit No PAD004835146, issued February 14, 2005
16. MAX Environmental Technologies Inc Yukon Facility Capping of Pre-RCRA Disposal units Revised Plan, dated May 2005
17. Facility Wide Groundwater Monitoring and Reporting Plan, Mill Service dated July 1996
18. Mill Service Historical Environmental Audit, dated June 1992.
19. Mill Service - Yukon Plant Impoundment No 5 Closure Plan dated October 1986
20. Pennsylvania Department of Environmental Resources Consent Order and Agreement, dated 1985

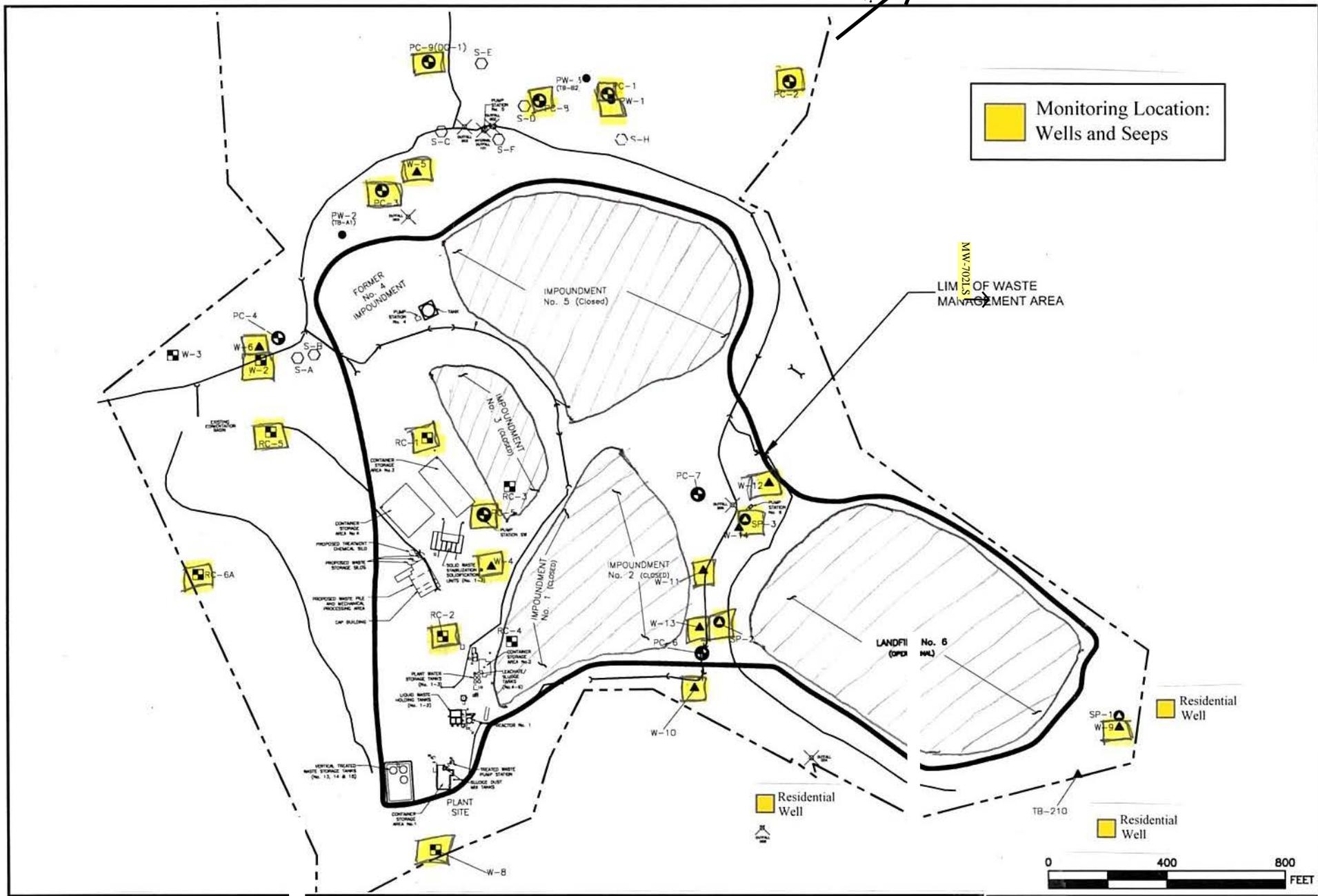


Statement of Basis

MAX Environmental Technologies, Inc. Yukon Facility

FIGURE 1

Facility Location



Statement of Basis
MAX Environmental Technologies Yukon Facility

FIGURE 2
Facility Layout

MAX ENVIRONMENTAL TECHNOLOGIES, INC.

DRWN: ERM	DATE: 05/10/18
CHKD: RJH	DATE: 05/11/18
APPD: RJH	DATE: 05/11/18
SCALE: AS SHOWN	

KEY ENVIRONMENTAL INCORPORATED

ATTACHMENT B
PUBLIC COMMENTS



November 19, 2020

Via Electronic Mail

Griff Miller
Project Manager
EPA Mid-Atlantic Region
Mail Code: 3LD20
1650 Arch Street 19103

**Re: Proposed RCRA Corrective Action - Cleanup Proposal and Draft Permit for
MAX Environmental Technologies, Inc. in Yukon, PA - EPA ID: PAD004835146**

Dear Mr. Miller,

The following comments are submitted on behalf of the Mountain Watershed Association (“MWA”) and on behalf of its over 2,000 members. MWA’s mission is to protect, preserve, and restore the Indian Creek and greater Youghiogheny River Watersheds, of which Sewickley Creek is a critical part. The Max Environmental (“Max”) Yukon site is located on and discharges into Sewickley Creek. For decades, the site has been a concern for the residents and that concern continues to this day. The dangerous hazardous waste that is treated at the site has the potential to cause very serious impacts to human health and the facility has commonly been found out of compliance with its permit standards.

Max Environmental has a long history of noncompliance with its permits. For example:

- From January 2007 to August 2019, MAX’s NPDES permit was out of compliance for 1,846 days. Those exceedances included fecal coliform, ammonia, chlorine, and more.
- In one year, from August 2018 to August 2019, Max exceeded contaminants like hexavalent chromium, zinc, oil & grease, pH, for 124 days.
- Max continues to struggle with compliance and the DEP issued violations in February and June of 2020. In the June violation, that DEP cited Max for:
 - failure to monitor pollutants,
 - failure to properly operate and maintain all facilities,
 - and failure to take necessary measures to prevent pollutants from reaching waters of the Commonwealth

It is not clear that Max has remedied those citations included in the June 2020 violation.



Some of Max's more recent violations have come as a result of complaints filed by residents, as well as from our own Youghiogheny Riverkeeper. The Riverkeeper observed foaming, yellow water from one of MAX's outflows that discharges directly into Sewickley Creek and took water samples, which are attached. Twice, the results of this sampling indicated a number of concerning pollutants, including very high levels of arsenic and strontium. Arsenic was found at levels up to 2.9 mg/l, which is nearly 300 times EPA's Drinking Water Standards of .01 mg/l, and strontium was found at levels up to 25.8 mg/l, which is more than 6 times EPA standards of 4 mg/l. For at least 3 weeks, these discharges flowed directly into Sewickley Creek, which is a popular recreational spot for fishing and swimming.

Arsenic is a known human carcinogen and immediate symptoms from exposure can include a sore throat and irritated lungs. Excess levels of strontium have been linked to leukemia and bone cancers. Strontium is also a strong indicator of oil and gas wastes, which MAX lists as one of their accepted wastes. Oil and gas wastes are known to contain high levels of technologically enhanced naturally occurring radioactive materials (TENORM). Data from USGS studies show that oil- and gas-field produced waters in the northern Appalachian Basin have been found to contain radioactive elements such as radium at levels thousands of times higher than the drinking water standard¹. Given this information, as well as high levels of strontium in our samples, we believe that MAX should be required to monitor for radiological contaminants such as radium.

When conducting their investigation in response to MWA's and residents' complaints, DEP found that MAX had misrepresented the locations of some on-site outfalls on official maps, which could distort sampling results. They also sampled a culvert near MAX that indicated that the following contaminants were detected above EPA Drinking Water Standards: barium, manganese, nitrate, and fluoride.

Because of Max's egregious history of noncompliance - as well as its continued and ongoing activity that contaminates the environment and community surrounding the site - it is imperative that the CAP adopt additional and more stringent monitoring requirements than the state-level permits require.

Statement of Basis Should Require Prevention of Release For All Solid Waste

Amending the language of the Statement of Basis to include reporting of all solid waste spills, is one way to help increase reporting and could result in better protections for the community. There are solid wastes that are not defined as hazardous waste but nonetheless are hazardous to human health and the environment. For example, the fracking waste that makes up roughly

¹ USGS. Rowan et al 2011. <https://pubs.usgs.gov/sir/2011/5135/pdf/sir2011-5135.pdf>



80% of all waste that Max receives, is highly radioactive and known to have severe health impacts, yet this is not yet defined as hazardous.

A release of such waste would pose a very serious threat to the nearby community and so it is critical that it be reported as well.

Section 5 of the Statement of Basis should be amended in order to remedy this. It currently reads:

MAX shall continue to comply with the terms and conditions of the Permits, including reporting to PADEP any releases of hazardous waste from the Facility..

This language should be amended to say:

MAX shall continue to comply with the terms and conditions of the Permits, including reporting to PADEP any releases of hazardous **or solid** waste from the Facility...

CAP Should Include Additional Monitoring And Sampling Requirements

Considering Max's ongoing, as well as egregious history of noncompliance issues, the Corrective Action Plan should institute more stringent standards of monitoring and reporting than are currently included. One important way this should be done is to modify and clarify the Plan's requirement regarding representative sampling.²

Without additional clarification, this may lead to a situation where such "representative" samples fail to be fully representative because they are taken randomly - in a way that does not accurately reflect if hazardous waste has been treated properly at all points in the site.

For example, if solid waste is treated by using a backhoe to mix the materials in a pit, this will likely not result in a 100% homogeneous material. Imagine the deep corners and how difficult it would be to get the material in those deep corners thoroughly combined with the chemicals that are added to the waste for treatment. If Max doesn't sample in all sections where there may be treatment problems, they will likely pass a batch that has not been completely treated.

If Max was using a different treatment method, such as pugmills, which mix the waste in a way that creates a homogenous result, then random sampling would be appropriate. In fact, this might be a more effective method and the Corrective Action Plan should require Max to implement the use of such mechanisms.

² Draft Corrective Action Plan Section B(8)(a).



In order to ensure the sampling accurately reflects conditions at the site, the requirement should be modified so that it makes clear sampling should be representative **of the entire range of potential range of conditions**. For example, section B(8)(a) should be amended to read: Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity, *including sampling at times and/or locations when/where treated wastes or effluent may not meet land disposal restriction requirements*.

In Section 7.0, "Data Interpretation", the problem again arises. The language is so broad that it allows for only one sample to be required, if the sample is less than or equal to 80% of the treatment limit. If Max picks the "right" sample location -- or avoids locations where they might expect treatment doesn't work as well -- they will essentially pass the requirement every time. Regardless of whether the waste has been properly treated.

As was stated earlier, one way to remedy this is by clarifying that representative samples are done from the potential range of conditions.

Another effective measure would be to require that more than one sample per batch is taken. This is one of the best ways to help confirm that treatment has been completed. We strongly suggest that language clarification and additional samples of each batch be adopted into the final Corrective Action Plan in order to assure the site is being run safely.

Thank you for the opportunity to provide comment and please feel free to contact us with any additional questions.

Melissa Marshall, Esq.
Community Advocate
Mountain Watershed Association

Attachment A

Thursday, June 11, 2020

To Whom It May Concern
MOUNTAIN WATERSHED ASSOCIATION INC.
PO BOX 408
MELCROFT, PA 15462

Order No.: G2006131

Dear To Whom It May Concern:

Geochemical Testing received 1 sample(s) on 6/2/2020 for the analyses presented in the following report.

There were no problems with sample receipt protocols and analyses met the TNI/NELAC, EPA, and laboratory specifications except where noted in the Case Narrative or Laboratory Results.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,



Timothy W. Bergstresser
Director of Technical Services

Geochemical Testing

Date: 11-Jun-20

CLIENT: MOUNTAIN WATERSHED ASSOCIATI
Project:
Lab Order: G2006131

CASE NARRATIVE

No problems were encountered during analysis of this workorder, except if noted in this report.

Legend:
H - Method Hold Time exceeded and is not compliant with 40CFR136 Table II.
U - The analyte was not detected at or above the listed concentration, which is below the laboratory quantitation limit.
B - Analyte detected in the associated Method Blank
Q1 - See case narrative ND - Not Detected
MCL - Contaminant Limit J - Indicates an estimated value.
Q - Qualifier QL -Quantitation Limit DF - Dilution Factor

S - Surrogate Recovery outside accepted recovery limits
T - Sample received above required temperature and is not compliant with 40CFR136 Table II.
T1 - Sample received above required temperature
MDA - Minimum Detectable Activity.
** - Value exceeds Action Limit
TICs - Tentatively Identified Compounds.
E - Value above quantitation range



Laboratory Results

Geochemical Testing

Date: 11-Jun-20

CLIENT:	MOUNTAIN WATERSHED ASSOCIATION INC.	Client Sample ID:	Dis
Lab Order:	G2006131		
Project:		Sampled By:	Mountain Watershed Associatio
Lab ID:	G2006131-001	Collection Date:	6/2/2020 9:55:00 AM
Matrix:	SURFACE WATER	Received Date:	6/2/2020 2:35:22 PM

Analyses	Result	QL	Q	Units	DF	Date Prepared	Date Analyzed
INORGANIC NON-METALS		Analyst: MBG			EPA 300.0		EPA 300.0
Bromide	81.2	5.0		mg/L	25	06/05/20 12:15 PM	06/05/20 5:22 PM
Chloride	4170	25.0		mg/L	25	06/05/20 12:15 PM	06/05/20 5:22 PM
Sulfate	5370	50.0		mg/L	25	06/05/20 12:15 PM	06/05/20 5:22 PM
INORGANIC METALS		Analyst: MEG			EPA 200.2		EPA 200.7
Aluminum	0.3	0.1		mg/L	1	06/04/20 7:20 AM	06/05/20 10:11 AM
Boron	5.74	0.05		mg/L	1	06/04/20 7:20 AM	06/05/20 10:11 AM
Calcium	874	1.0		mg/L	10	06/04/20 7:20 AM	06/06/20 9:25 AM
Cobalt	0.015	0.005		mg/L	1	06/04/20 7:20 AM	06/05/20 10:11 AM
Iron	0.29	0.05		mg/L	1	06/04/20 7:20 AM	06/05/20 10:11 AM
Lithium	0.41	0.01		mg/L	1	06/04/20 7:20 AM	06/05/20 10:11 AM
Magnesium	81.7	0.1		mg/L	1	06/04/20 7:20 AM	06/05/20 10:11 AM
Manganese	0.10	0.01		mg/L	1	06/04/20 7:20 AM	06/05/20 10:11 AM
Molybdenum	8.33	0.02		mg/L	1	06/04/20 7:20 AM	06/05/20 10:11 AM
Phosphorus	0.82	0.01		mg/L	1	06/04/20 7:20 AM	06/06/20 10:58 AM
Potassium	496	0.5		mg/L	1	06/04/20 7:20 AM	06/05/20 10:11 AM
Silicon	9.9	0.1		mg/L	1	06/04/20 7:20 AM	06/06/20 10:58 AM
Sodium	4130	4.0		mg/L	20	06/04/20 7:20 AM	06/08/20 7:12 AM
Tin	< 0.10	0.10		mg/L	1	06/04/20 7:20 AM	06/05/20 10:11 AM
Titanium	< 0.010	0.010		mg/L	1	06/04/20 7:20 AM	06/05/20 10:11 AM
Vanadium	0.310	0.005		mg/L	1	06/04/20 7:20 AM	06/05/20 10:11 AM
Zinc	0.04	0.01		mg/L	1	06/04/20 7:20 AM	06/05/20 10:11 AM
INORGANIC METALS		Analyst: RLR			EPA 200.2		EPA 200.8
Antimony	1230	50.0		µg/L	50	06/04/20 7:20 AM	06/05/20 10:21 AM
Arsenic	2930	50.0		µg/L	50	06/04/20 7:20 AM	06/05/20 10:21 AM
Barium	39.7	5.0		µg/L	1	06/04/20 7:20 AM	06/05/20 9:54 AM
Cadmium	1.5	0.2		µg/L	1	06/04/20 7:20 AM	06/05/20 9:54 AM
Chromium	12.6	1.0		µg/L	1	06/04/20 7:20 AM	06/05/20 9:54 AM
Copper	15.0	1.0		µg/L	1	06/04/20 7:20 AM	06/05/20 9:54 AM
Lead	23.3	1.0		µg/L	1	06/04/20 7:20 AM	06/05/20 9:54 AM
Nickel	333	2.5		µg/L	5	06/04/20 7:20 AM	06/05/20 10:19 AM
Rubidium	815	50.0		µg/L	10	06/06/20 6:20 AM	06/10/20 7:59 AM
Selenium	178	5.0		µg/L	5	06/04/20 7:20 AM	06/05/20 10:19 AM
Silver	< 0.2	0.2		µg/L	1	06/04/20 7:20 AM	06/05/20 9:54 AM
Strontium	25800	2500		µg/L	500	06/04/20 7:20 AM	06/05/20 10:58 AM
Tungsten	160	25.0		µg/L	5	06/04/20 7:20 AM	06/05/20 10:19 AM
Uranium	< 1.0	1.0		µg/L	1	06/04/20 7:20 AM	06/05/20 9:54 AM



July 06, 2020

Eric Harder
Mountain Watershed
1414 b Indian Creek Valley Rd
Melcroft, PA 15462

RE: Project: Sewickley
Pace Project No.: 30367730

Dear Eric Harder:

Enclosed are the analytical results for sample(s) received by the laboratory on June 12, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Greensburg

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Alexis E. Ozoroski
alexis.ozoroski@pacelabs.com
(724)850-5600
Project Manager

Enclosures



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Sewickley
Pace Project No.: 30367730

Pace Analytical Services Pennsylvania

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
Delaware Certification
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Florida: Cert E871149 SEKS WET
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA180012
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: 2017020
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991

Missouri Certification #: 235
Montana Certification #: Cert0082
Nebraska Certification #: NE-OS-29-14
Nevada Certification #: PA014572018-1
New Hampshire/TNI Certification #: 297617
New Jersey/TNI Certification #: PA051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Ohio EPA Rad Approval: #41249
Oregon/TNI Certification #: PA200002-010
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: 02867
Texas/TNI Certification #: T104704188-17-3
Utah/TNI Certification #: PA014572017-9
USDA Soil Permit #: P330-17-00091
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 9526
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Approve List for Rad
Wyoming Certification #: 8TMS-L

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SAMPLE ANALYTE COUNT

Project: Sewickley

Pace Project No.: 30367730

Lab ID	Sample ID	Method	Analysts	Analytes	
				Reported	Laboratory
30367730001	dismax	EPA 6010B	CTS	28	PASI-PA
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		300.0 Rev.2.1, 1993	JWL	3	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: Sewickley
Pace Project No.: 30367730

Method: EPA 6010B
Description: 6010 MET ICP
Client: Mountain Watershed
Date: July 06, 2020

General Information:

1 sample was analyzed for EPA 6010B by Pace Analytical Services Greensburg. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3005A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 401487

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 30367850001,30367853002

ML: Matrix spike recovery and/or matrix spike duplicate recovery was below laboratory control limits. Result may be biased low.

- MS (Lab ID: 1943731)
 - Calcium
 - Magnesium
- MS (Lab ID: 1943734)
 - Calcium
 - Sodium
- MSD (Lab ID: 1943732)
 - Calcium
 - Magnesium

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: Sewickley
Pace Project No.: 30367730

Method: EPA 903.1
Description: 903.1 Radium 226
Client: Mountain Watershed
Date: July 06, 2020

General Information:

1 sample was analyzed for EPA 903.1 by Pace Analytical Services Greensburg. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: Sewickley
Pace Project No.: 30367730

Method: EPA 904.0
Description: 904.0 Radium 228
Client: Mountain Watershed
Date: July 06, 2020

General Information:

1 sample was analyzed for EPA 904.0 by Pace Analytical Services Greensburg. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: Sewickley
Pace Project No.: 30367730

Method: 300.0 Rev.2.1, 1993
Description: 300.0 IC Anions 28 Days
Client: Mountain Watershed
Date: July 06, 2020

General Information:

1 sample was analyzed for 300.0 Rev.2.1, 1993 by Pace Analytical Services Greensburg. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: 403725

D3: Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

- dismax (Lab ID: 30367730001)
- Bromide

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Sewickley
Pace Project No.: 30367730

Sample: dismax **Lab ID: 30367730001** Collected: 06/12/20 09:20 Received: 06/12/20 10:45 Matrix: Water

Comments:
 • 6/12/20 - Added 2.5ml HNO3 to all sample bottles prior to analysis. pH <2.
 • Samples were received at a temperature above 6 degrees C, no ice was present. Samples did not meet the requirement for thermal preservation.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP								
Analytical Method: EPA 6010B Preparation Method: EPA 3005A								
Pace Analytical Services - Greensburg								
Aluminum	386	ug/L	50.0	1	06/18/20 13:58	06/22/20 12:27	7429-90-5	
Antimony	813	ug/L	6.0	1	06/18/20 13:58	06/22/20 12:27	7440-36-0	
Arsenic	2170	ug/L	5.0	1	06/18/20 13:58	06/22/20 12:27	7440-38-2	
Barium	58.6	ug/L	10.0	1	06/18/20 13:58	06/22/20 12:27	7440-39-3	
Boron	3990	ug/L	50.0	1	06/18/20 13:58	06/22/20 12:27	7440-42-8	
Cadmium	8.2	ug/L	3.0	1	06/18/20 13:58	06/22/20 12:27	7440-43-9	
Calcium	874000	ug/L	1000	1	06/18/20 13:58	06/22/20 12:27	7440-70-2	
Chromium	12.2	ug/L	5.0	1	06/18/20 13:58	06/22/20 12:27	7440-47-3	
Cobalt	6.6	ug/L	5.0	1	06/18/20 13:58	06/22/20 12:27	7440-48-4	
Copper	16.0	ug/L	5.0	1	06/18/20 13:58	06/22/20 12:27	7440-50-8	
Iron	628	ug/L	70.0	1	06/18/20 13:58	06/22/20 12:27	7439-89-6	
Lead	41.1	ug/L	5.0	1	06/18/20 13:58	06/22/20 12:27	7439-92-1	
Lithium	300	ug/L	40.0	1	06/18/20 13:58	06/22/20 12:27	7439-93-2	
Magnesium	65200	ug/L	200	1	06/18/20 13:58	06/22/20 12:27	7439-95-4	
Manganese	163	ug/L	5.0	1	06/18/20 13:58	06/22/20 12:27	7439-96-5	
Molybdenum	6060	ug/L	20.0	1	06/18/20 13:58	06/22/20 12:27	7439-98-7	
Nickel	234	ug/L	10.0	1	06/18/20 13:58	06/22/20 12:27	7440-02-0	
Phosphorus	426	ug/L	50.0	1	06/18/20 13:58	06/22/20 12:27	7723-14-0	
Potassium	369000	ug/L	500	1	06/18/20 13:58	06/22/20 12:27	7440-09-7	
Selenium	152	ug/L	8.0	1	06/18/20 13:58	06/22/20 12:27	7782-49-2	
Silicon	5540	ug/L	100	1	06/18/20 13:58	06/22/20 12:27	7440-21-3	
Silver	ND	ug/L	6.0	1	06/18/20 13:58	06/22/20 12:27	7440-22-4	
Sodium	3140000	ug/L	10000	10	06/18/20 13:58	06/22/20 12:38	7440-23-5	
Strontium	33600	ug/L	50.0	10	06/18/20 13:58	06/22/20 12:38	7440-24-6	
Tin	ND	ug/L	50.0	1	06/18/20 13:58	06/22/20 12:27	7440-31-5	
Titanium	ND	ug/L	5.0	1	06/18/20 13:58	06/22/20 12:27	7440-32-6	
Vanadium	164	ug/L	5.0	1	06/18/20 13:58	06/22/20 12:27	7440-62-2	
Zinc	76.4	ug/L	10.0	1	06/18/20 13:58	06/22/20 12:27	7440-66-6	

300.0 IC Anions 28 Days

Analytical Method: 300.0 Rev.2.1, 1993
Pace Analytical Services - Greensburg

Bromide	ND	mg/L	250	500		07/06/20 12:44	24959-67-9	D3
Chloride	4480	mg/L	500	1000		07/06/20 13:00	16887-00-6	
Sulfate	5330	mg/L	500	1000		07/06/20 13:00	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Sewickley
Pace Project No.: 30367730

QC Batch: 401487	Analysis Method: EPA 6010B
QC Batch Method: EPA 3005A	Analysis Description: 6010 MET
	Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 30367730001

METHOD BLANK: 1943728 Matrix: Water

Associated Lab Samples: 30367730001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum	ug/L	ND	50.0	06/22/20 11:31	
Antimony	ug/L	ND	6.0	06/22/20 11:31	
Arsenic	ug/L	ND	5.0	06/22/20 11:31	
Barium	ug/L	ND	10.0	06/22/20 11:31	
Boron	ug/L	ND	50.0	06/22/20 11:31	
Cadmium	ug/L	ND	3.0	06/22/20 11:31	
Calcium	ug/L	ND	1000	06/22/20 11:31	
Chromium	ug/L	ND	5.0	06/22/20 11:31	
Cobalt	ug/L	ND	5.0	06/22/20 11:31	
Copper	ug/L	ND	5.0	06/22/20 11:31	
Iron	ug/L	ND	70.0	06/22/20 11:31	
Lead	ug/L	ND	5.0	06/22/20 11:31	
Lithium	ug/L	ND	40.0	06/22/20 11:31	
Magnesium	ug/L	ND	200	06/22/20 11:31	
Manganese	ug/L	ND	5.0	06/22/20 11:31	
Molybdenum	ug/L	ND	20.0	06/22/20 11:31	
Nickel	ug/L	ND	10.0	06/22/20 11:31	
Phosphorus	ug/L	ND	50.0	06/22/20 11:31	
Potassium	ug/L	ND	500	06/22/20 11:31	
Selenium	ug/L	ND	8.0	06/22/20 11:31	
Silicon	ug/L	ND	100	06/22/20 11:31	
Silver	ug/L	ND	6.0	06/22/20 11:31	
Sodium	ug/L	ND	1000	06/22/20 11:31	
Strontium	ug/L	ND	5.0	06/22/20 11:31	
Tin	ug/L	ND	50.0	06/22/20 11:31	
Titanium	ug/L	ND	5.0	06/22/20 11:31	
Vanadium	ug/L	ND	5.0	06/22/20 11:31	
Zinc	ug/L	ND	10.0	06/22/20 11:31	

LABORATORY CONTROL SAMPLE: 1943729

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	5000	4640	93	80-120	
Antimony	ug/L	500	479	96	80-120	
Arsenic	ug/L	500	496	99	80-120	
Barium	ug/L	500	462	92	80-120	
Boron	ug/L	500	482	96	80-120	
Cadmium	ug/L	500	486	97	80-120	
Calcium	ug/L	5000	4610	92	80-120	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Sewickley
Pace Project No.: 30367730

LABORATORY CONTROL SAMPLE: 1943729

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chromium	ug/L	500	481	96	80-120	
Cobalt	ug/L	500	489	98	80-120	
Copper	ug/L	500	467	93	80-120	
Iron	ug/L	5000	4640	93	80-120	
Lead	ug/L	500	470	94	80-120	
Lithium	ug/L	500	460	92	80-120	
Magnesium	ug/L	5000	4420	88	80-120	
Manganese	ug/L	500	474	95	80-120	
Molybdenum	ug/L	500	491	98	80-120	
Nickel	ug/L	500	496	99	80-120	
Phosphorus	ug/L	500	489	98	80-120	
Potassium	ug/L	5000	4530	91	80-120	
Selenium	ug/L	500	496	99	80-120	
Silicon	ug/L	2500	2200	88	80-120	
Silver	ug/L	250	239	96	80-120	
Sodium	ug/L	5000	4630	93	80-120	
Strontium	ug/L	500	455	91	80-120	
Tin	ug/L	500	478	96	80-120	
Titanium	ug/L	500	473	95	80-120	
Vanadium	ug/L	500	468	94	80-120	
Zinc	ug/L	500	480	96	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1943731 1943732

Parameter	30367850001		MS	MSD	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
	Units	Result	Spike Conc.	Spike Conc.							
Aluminum	ug/L	0.050 U mg/L	5000	5000	4530	4570	90	91	75-125	1	
Antimony	ug/L	6.0 U	500	500	491	486	98	97	75-125	1	
Arsenic	ug/L	5.0 U	500	500	507	493	101	99	75-125	3	
Barium	ug/L	0.048 mg/L	500	500	498	497	90	90	75-125	0	
Boron	ug/L	0.023J mg/L	500	500	523	515	100	98	75-125	1	
Cadmium	ug/L	3.0 U	500	500	494	485	99	97	75-125	2	
Calcium	ug/L	82100	5000	5000	83000	82700	19	12	75-125	0	ML
Chromium	ug/L	0.81J	500	500	474	468	95	93	75-125	1	
Cobalt	ug/L	0.56J	500	500	487	478	97	96	75-125	2	
Copper	ug/L	5.0 U	500	500	457	453	91	90	75-125	1	
Iron	ug/L	0.14 mg/L	5000	5000	4590	4600	89	89	75-125	0	
Lead	ug/L	5.0 U	500	500	467	464	93	92	75-125	1	
Lithium	ug/L	0.0092J mg/L	500	500	466	464	91	91	75-125	0	
Magnesium	ug/L	14200	5000	5000	17700	17700	72	70	75-125	0	ML
Manganese	ug/L	0.11 mg/L	500	500	563	558	90	89	75-125	1	

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QUALITY CONTROL DATA

Project: Sewickley
Pace Project No.: 30367730

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1943731											
Parameter	Units	30367850001 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
			Spike Conc.	MSD Conc.	MS Result	MSD Result					
Molybdenum	ug/L	0.88J	500	500	505	495	101	99	75-125	2	
Nickel	ug/L	10.0 U	500	500	492	484	98	97	75-125	2	
Phosphorus	ug/L	25.8J	500	500	524	517	100	98	75-125	1	
Potassium	ug/L	1350	5000	5000	5810	5770	89	88	75-125	1	
Selenium	ug/L	0.0080 U mg/L	500	500	503	494	101	99	75-125	2	
Silicon	ug/L	5460	2500	2500	7430	7410	79	78	75-125	0	
Silver	ug/L	6.0 U	250	250	246	241	98	96	75-125	2	
Sodium	ug/L	8870	5000	5000	13000	13000	83	82	75-125	0	
Strontium	ug/L	0.29 mg/L	500	500	721	719	87	86	75-125	0	
Tin	ug/L	50.0 U	500	500	487	477	97	95	75-125	2	
Titanium	ug/L	5.0 U	500	500	480	473	96	94	75-125	2	
Vanadium	ug/L	0.00063 J mg/L	500	500	469	460	94	92	75-125	2	
Zinc	ug/L	0.012 mg/L	500	500	477	469	93	91	75-125	2	

MATRIX SPIKE SAMPLE: 1943734							
Parameter	Units	30367853002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	1.1 mg/L	5000	6040	99	75-125	
Antimony	ug/L	6.0 U	500	463	93	75-125	
Arsenic	ug/L	5.0 U	500	483	97	75-125	
Barium	ug/L	0.098 mg/L	500	540	88	75-125	
Boron	ug/L	0.036J mg/L	500	508	94	75-125	
Cadmium	ug/L	3.0 U	500	471	94	75-125	
Calcium	ug/L	56900	5000	59400	50	75-125	ML
Chromium	ug/L	1.4J	500	457	91	75-125	
Cobalt	ug/L	0.86J	500	469	94	75-125	
Copper	ug/L	5.0 U	500	448	89	75-125	
Iron	ug/L	1.7 mg/L	5000	6160	89	75-125	
Lead	ug/L	5.0 U	500	452	90	75-125	
Lithium	ug/L	0.0063J mg/L	500	454	90	75-125	
Magnesium	ug/L	12300	5000	16000	75	75-125	
Manganese	ug/L	0.21 mg/L	500	650	88	75-125	
Molybdenum	ug/L	20.0 U	500	478	95	75-125	
Nickel	ug/L	1.8J	500	473	94	75-125	
Phosphorus	ug/L	68.6	500	549	96	75-125	
Potassium	ug/L	2190	5000	6560	87	75-125	
Selenium	ug/L	0.0080 U mg/L	500	481	96	75-125	
Silicon	ug/L	5240	2500	7980	110	75-125	
Silver	ug/L	6.0 U	250	231	92	75-125	
Sodium	ug/L	34700	5000	37500	57	75-125	ML
Strontium	ug/L	0.34 mg/L	500	765	85	75-125	

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QUALITY CONTROL DATA

Project: Sewickley
Pace Project No.: 30367730

MATRIX SPIKE SAMPLE: 1943734		30367853002	Spike	MS	MS	% Rec	
Parameter	Units	Result	Conc.	Result	% Rec	Limits	Qualifiers
Tin	ug/L	50.0 U	500	458	92	75-125	
Titanium	ug/L	16.7	500	468	90	75-125	
Vanadium	ug/L	0.0025J mg/L	500	450	90	75-125	
Zinc	ug/L	0.0059J mg/L	500	452	89	75-125	

SAMPLE DUPLICATE: 1943730

Parameter	Units	30367850001 Result	Dup Result	RPD	Qualifiers
Aluminum	ug/L	0.050 U mg/L	ND		
Antimony	ug/L	6.0 U	ND		
Arsenic	ug/L	5.0 U	ND		
Barium	ug/L	0.048 mg/L	48.4	2	
Boron	ug/L	0.023J mg/L	22.9J		
Cadmium	ug/L	3.0 U	.39J		
Calcium	ug/L	82100	83000	1	
Chromium	ug/L	0.81J	.75J		
Cobalt	ug/L	0.56J	.64J		
Copper	ug/L	5.0 U	ND		
Iron	ug/L	0.14 mg/L	148	6	
Lead	ug/L	5.0 U	ND		
Lithium	ug/L	0.0092J mg/L	8.9J		
Magnesium	ug/L	14200	14300	1	
Manganese	ug/L	0.11 mg/L	112	1	
Molybdenum	ug/L	0.88J	1J		
Nickel	ug/L	10.0 U	ND		
Phosphorus	ug/L	25.8J	24.8J		
Potassium	ug/L	1350	1360	1	
Selenium	ug/L	0.0080 U mg/L	ND		
Silicon	ug/L	5460	5530	1	
Silver	ug/L	6.0 U	ND		
Sodium	ug/L	8870	8960	1	
Strontium	ug/L	0.29 mg/L	291	2	
Tin	ug/L	50.0 U	ND		
Titanium	ug/L	5.0 U	ND		
Vanadium	ug/L	0.00063J mg/L	ND		
Zinc	ug/L	0.012 mg/L	12.0	1	

SAMPLE DUPLICATE: 1943733

Parameter	Units	30367853002 Result	Dup Result	RPD	Qualifiers
Aluminum	ug/L	1.1 mg/L	1040	3	
Antimony	ug/L	6.0 U	ND		

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QUALITY CONTROL DATA

Project: Sewickley
Pace Project No.: 30367730

SAMPLE DUPLICATE: 1943733

Parameter	Units	30367853002 Result	Dup Result	RPD	Qualifiers
Arsenic	ug/L	5.0 U	ND		
Barium	ug/L	0.098 mg/L	95.6	2	
Boron	ug/L	0.036J mg/L	35.6J		
Cadmium	ug/L	3.0 U	ND		
Calcium	ug/L	56900	56000	2	
Chromium	ug/L	1.4J	4.4J		
Cobalt	ug/L	0.86J	.8J		
Copper	ug/L	5.0 U	ND		
Iron	ug/L	1.7 mg/L	1770	2	
Lead	ug/L	5.0 U	ND		
Lithium	ug/L	0.0063J mg/L	5.6J		
Magnesium	ug/L	12300	12100	2	
Manganese	ug/L	0.21 mg/L	207	1	
Molybdenum	ug/L	20.0 U	ND		
Nickel	ug/L	1.8J	1.8J		
Phosphorus	ug/L	68.6	67.8	1	
Potassium	ug/L	2190	2130	3	
Selenium	ug/L	0.0080 U mg/L	ND		
Silicon	ug/L	5240	5110	2	
Silver	ug/L	6.0 U	ND		
Sodium	ug/L	34700	33800	3	
Strontium	ug/L	0.34 mg/L	334	2	
Tin	ug/L	50.0 U	ND		
Titanium	ug/L	16.7	15.0	11	
Vanadium	ug/L	0.0025J mg/L	2.5J		
Zinc	ug/L	0.0059J mg/L	5.9J		

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QUALITY CONTROL DATA

Project: Sewickley
Pace Project No.: 30367730

QC Batch: 403725	Analysis Method: 300.0 Rev.2.1, 1993
QC Batch Method: 300.0 Rev.2.1, 1993	Analysis Description: 300.0 IC Anions 28day
	Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 30367730001

METHOD BLANK: 1953995 Matrix: Water
Associated Lab Samples: 30367730001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Bromide	mg/L	ND	0.50	07/06/20 12:11	
Chloride	mg/L	ND	0.50	07/06/20 12:11	
Sulfate	mg/L	ND	0.50	07/06/20 12:11	

LABORATORY CONTROL SAMPLE: 1953996

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Bromide	mg/L	2	2.1	107	90-110	
Chloride	mg/L	2	2.1	107	90-110	
Sulfate	mg/L	2	2.1	107	90-110	

MATRIX SPIKE SAMPLE: 1953997

Parameter	Units	30369979001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Bromide	mg/L	250 U	1000	1080	108	90-110	
Chloride	mg/L	774	1000	1790	101	90-110	
Sulfate	mg/L	767	1000	1770	100	90-110	

SAMPLE DUPLICATE: 1953998

Parameter	Units	30369979001 Result	Dup Result	RPD	Qualifiers
Bromide	mg/L	250 U	ND		
Chloride	mg/L	774	742	4	
Sulfate	mg/L	767	717	7	

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REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Sewickley

Pace Project No.: 30367730

Sample: dismax **Lab ID: 30367730001** Collected: 06/12/20 09:20 Received: 06/12/20 10:45 Matrix: Water
PWS: Site ID: Sample Type:

Comments: • 6/12/20 - Added 2.5ml HNO₃ to all sample bottles prior to analysis. pH <2.
• Samples were received at a temperature above 6 degrees C, no ice was present. Samples did not meet the requirement for thermal preservation.

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	3.64 ± 7.15 (11.3) C:NA T:90%	pCi/L	06/30/20 11:36	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	21.1 ± 18.1 (36.7) C:64% T:82%	pCi/L	06/29/20 14:18	15262-20-1	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Sewickley

Pace Project No.: 30367730

QC Batch: 401247

Analysis Method: EPA 903.1

QC Batch Method: EPA 903.1

Analysis Description: 903.1 Radium-226

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 30367730001

METHOD BLANK: 1942454

Matrix: Water

Associated Lab Samples: 30367730001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.158 ± 0.425 (0.790) C:NA T:82%	pCi/L	06/30/20 11:36	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Sewickley
Pace Project No.: 30367730

QC Batch: 401246	Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0	Analysis Description: 904.0 Radium 228
	Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 30367730001

METHOD BLANK: 1942453 Matrix: Water

Associated Lab Samples: 30367730001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.469 ± 0.457 (0.930) C:63% T:74%	pCi/L	06/29/20 12:16	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Sewickley
Pace Project No.: 30367730

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Act - Activity

Unc - Uncertainty: For Safe Drinking Water Act (SDWA) analyses, the reported Unc. is the calculated Count Uncertainty (95% confidence interval) using a coverage factor of 1.96. For all other matrices (non-SDWA), the reported Unc. is the calculated Expanded Uncertainty (aka Combined Standard Uncertainty, CSU), reported at the 95% confidence interval using a coverage factor of 1.96.

Gamma Spec: The Unc. reported for all gamma-spectroscopy analyses (EPA 901.1), is the calculated Expanded Uncertainty (CSU) at the 95.4% confidence interval, using a coverage factor of 2.0.

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

ML Matrix spike recovery and/or matrix spike duplicate recovery was below laboratory control limits. Result may be biased low.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Sewickley
Pace Project No.: 30367730

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30367730001	dismax	EPA 3005A	401487	EPA 6010B	401547
30367730001	dismax	EPA 903.1	401247		
30367730001	dismax	EPA 904.0	401246		
30367730001	dismax	300.0 Rev.2.1, 1993	403725		

REPORT OF LABORATORY ANALYSIS

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Sample Receiving Non-Conformance Form (NCF)

Date: <i>11/2/2020</i>	Evaluated by: <i>mg</i>
Client: <i>W. Watershed</i>	

Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number

#- ^{Here} **30367730**

1. If Chain-of-Custody (COC) is not received: contact client and if necessary, fill out a COC and indicate that it was filled out by lab personnel. Note issues on this NCF.

2. If COC is incomplete, check applicable issues below and add details where appropriate:

Collection date/time missing or incorrect	Analyses or analytes: missing or clarification needed	Samples listed on COC do not match samples received (missing, additional, etc.)
Sample IDs on COC do not match sample labels	Required trip blanks were not received	Required signatures are missing

Comments/Details/Other issues not listed above:

3. Sample integrity issues: check applicable issues below and add details where appropriate:

Samples: Past holding time	Samples: Condition needs to be brought to lab personnel's attention (details below)	<input checked="" type="checkbox"/> Preservation: Improper
Samples: Not field filtered	Containers: Broken or compromised	<input checked="" type="checkbox"/> Temperature: not within acceptance criteria (typically 0-6C)
Samples: Insufficient volume received	Containers: Incorrect	Temperature: Samples arrived frozen
Samples: Cooler damaged or compromised	Custody Seals: Missing or compromised on samples, trip blanks or coolers	Vials received with improper headspace
Samples: contain chlorine or sulfides	Packing Material: Insufficient/Improper	<input checked="" type="checkbox"/> Other:

Comments/Details: *sample rec'd not on ice-out of temp*

4. If Samples not preserved properly and Sample Receiving adjusts pH, add details below:

Sample ID: <i>D15max</i>	Date/Time: <i>11/2/2020 1230</i>	Amount/type pres added: <i>2.5 ml of HNO₃</i>
Preserved by: <i>mg</i>	Initial and Final pH: <i>mg pH 12</i>	Lot # of pres added: <i>DL200533</i>
Sample ID:	Date/Time:	Amount/type pres added:
Preserved by:	Initial and Final pH:	Lot # of pres added:
Sample ID:	Date/Time:	Amount/type pres added:
Preserved by:	Initial and Final pH:	Lot # of pres added:

mg 6/11/20
HNO₃
TO 3 sample bottles

5. Client Contact: If client is contacted for any issue listed above, fill in details below:

Client:	Contacted per:
PM Initials:	Date/Time:

Client Comments/Instructions:

Attachment B

PURPLE AIR MONITOR DATA: High Level Air Pollution Dates								
created_at	PM1.0_CF1_ug	PM2.5_CF1_ug	PM10.0_CF1_u	UptimeMinute	RSSI_dbm	Temperature_F	Humidity_%	PM2.5_ATM_ug/m3
2020-06-10 22:	176.31	254.76	273.3	6309	-74.57	89	82.14	172.52
2020-06-11 07:	106.87	183.08	217.23	6819	-72.71	73.29	100	123.42
2020-06-11 07:	196.33	377.74	476.22	6834	-73.38	73	100	251.26
2020-06-11 10:	101.63	153.71	171.98	7014	-73.5	70	100	103.48
2020-06-11 10:	186.36	323.67	373.75	7029	-74	70.29	100	215.55
2020-07-05 03:	142.33	217.76	243.91	1828	-70.62	77	88.62	144.45
2020-07-05 03:	163.19	253.08	284.2	1843	-71.43	76.43	90.14	168.03
2020-07-05 03:	184.85	289.74	321.96	1858	-70	75.38	94.5	192.4
2020-07-05 03:	216.67	347.97	389.32	1873	-71.71	75	97.86	231.19
2020-07-05 04:	251.65	410.37	458.58	1888	-69.12	74.25	98.5	272.69
2020-07-05 04:	243.8	399.83	448.9	1903	-69.29	73.71	100	265.65
2020-07-05 04:	209.42	343.4	386.42	1918	-71.12	72.88	100	228.05
2020-07-05 04:	162.14	262.51	293.21	1933	-70.71	72.71	100	174.18
2020-07-05 05:	153.37	246.77	276.08	1948	-66.88	72.25	100	163.68
2020-07-05 05:	146.39	237.38	265.52	1963	-69	72	100	157.4
2020-07-05 05:	135.19	217.71	242.02	1978	-71.75	71.38	100	144.26
2020-07-05 05:	125.72	202.54	226.53	1993	-72.29	71	100	134.17
2020-07-05 06:	113.81	181.66	201.4	2008	-68.5	71	100	120.21
2020-07-05 06:	108.45	170.77	189.32	2023	-69.14	71	100	113.03
2020-09-05 21:	120.73	158.68	167.79	1697	-66	83	35.71	107.76
2020-10-14 03:	98.24	149.48	175.05	56777	-61.57	48	94.86	102.05
2020-10-18 02:	87.88	157.2	216.49	62462	-63.25	44	70	103.73
2020-11-04 12:	181.19	350.69	505.02	6527	-62.71	38	85.71	232.64
2020-11-06 01:	129.77	188.85	216.05	8747	-67	56	60.14	124.88

ATTACHMENT C

RESPONSE TO COMMENTS ON STATEMENT OF BASIS

Ms. Melissa Marshall of the Mountain Watershed Association submitted the following comments on the Statement of Basis via letter to Mr. Griff Miller, EPA, dated November 19, 2020. EPA has carefully reviewed these comments and found that they merited minor modifications to the proposed remedy in the Statement of Basis as detailed below. The following is a summary of Mountain Watershed Association's comments and EPA's responses:

1. Comment: *Data from USGS studies show ... waters in the northern Appalachian Basin ... contain radioactive elements such as radium at levels thousands of times higher than the drinking water standard [footnote omitted]. Given this information, as well as high levels of strontium in our samples... **MAX should be required to monitor for radiological contaminants such as radium.***

EPA Response: This comment refers to a regulated outflow from the Facility, which is permitted by PADEP under its National Pollutant and Discharge Elimination System (NPDES) Program. The NPDES permit sets effluent limitations for that outflow. Therefore, EPA has not added this monitoring requirement to the Final Remedy but has forwarded this comment to PADEP. Please contact Mr. James Stewart at PADEP for questions regarding the NPDES permit at the Facility.

2. Comment: *Statement of Basis Should Require Prevention of Release for All Solid Waste – For example, the fracking waste that makes up roughly 80% of all waste MAX receives...is not yet defined as hazardous. ... Section 5 of the Statement of Basis ... should be amended to say “MAX shall continue to comply with the terms and conditions of the Permits, including reporting to PADEP any releases of hazardous **or solid** waste from the Facility...”.*

EPA Response: EPA agrees and has made the suggested revision, so that Section 5, Paragraph 1, reads as follows:

1. Permit Compliance – MAX shall continue to comply with the terms and conditions of the Permits, including reporting to PADEP any releases or potential releases of hazardous or solid waste from the Facility that may endanger public drinking water supplies or otherwise threaten human health or the environment.