
North Coast Regional Water Quality Control Board

Response to Comments
Waste Discharge Requirements
Order No. R1-2021-0015
for the
Barella Family LLC
Roblar Road Quarry
Regional Water Quality Control Board, North Coast Region
August 19, 2021

Comments Received

The deadline for submittal of public comments regarding draft Waste Discharge Requirements for Order No. R1-2021-0015 (Draft Order) for the Roblar Road Quarry was June 1, 2021. The County of Sonoma Permit & Resource Management Department (Permit Sonoma) provided timely verbal and written comments. No other comments were received during the public comment period. North Coast Regional Water Quality Control Board (Regional Water Board) staff reviewed and discussed these comments with Permit Sonoma staff on May 25, 2021. The comments provided were related to ongoing coordination with Permit Sonoma on hydrology studies, overlapping regulatory authorities and clarifications in terminology between the Regional Water Board and the County of Sonoma, the local oversight agency for the Surface Mining and Reclamation Act of 1975 (SMARA). The comments were well received, noncontroversial and were addressed as summarized below.

This document first presents each comment received, then follows with the Staff response. There are also changes initiated by staff intended to clarify the language in the Proposed Order. 'Staff initiated' changes are presented after the public comments and responses. Text added to the Proposed Order is identified by underline and text to be deleted from the Proposed Order is identified by ~~strike-through~~ in this document. The term "Draft Order" refers to the version of the permit that was sent out for public comment. The term "Proposed Order" refers to the version of the permit that has been modified in response to comments and is being presented to the Regional Water Board for consideration.

Permit Sonoma Comments

Comment 1: Page 2

“Modify or remove 13.12 to be consistent with roles and responsibilities detailed in the state Surface Mining and Reclamation Act of 1975 (SMARA) in regards to Reclamation Plan approval or amendment. Reclamation Plan approvals or amendments are authorized by the lead agency, in this circumstance the lead agency is the County of Sonoma.”

Response 1:

The language in condition 13.12 of Section 13 of the Draft Order has been revised and renumbered. The revisions require the Discharger to submit a water quality plan to the Regional Water Board’s Executive Officer and removes the requirement for the Executive Officer to approve the Reclamation Plan. This separates the regulation of the water quality aspects of Facility reclamation from the existing Reclamation Plan authorization process led by the County of Sonoma. The revisions are as follows:

~~13.12.~~ 13.10. The Discharger shall submit ~~an updated Reclamation Plan~~ a water quality plan for final reclamation to the Regional Water Board’s Executive Officer for approval a minimum of 180 days prior to the initiation of Phase ~~3III~~ of quarry operations. The Discharger shall not initiate Phase 3 operations prior to the Executive Officer’s approval of the plan. The water quality plan shall be consistent with current Reclamation Plan and include additional water quality protection measures as needed to meet the following objectives: The updated Reclamation Plan must account for any operational or structural changes implemented during the life of the project.

- Prevent and minimize discharges of waste to Americano Creek and Ranch Tributary.
- Control sources of erosion to eliminate discharges to surface waters.
- Stabilize storm water outfalls, sediment pond spillways, soil stockpiles, and other artificial features that will remain post-quarry closure.
- Treat and properly dispose of groundwater seeping into the quarry pit that does not meet water quality objectives.⁸
- Promote revegetation through the application of topsoil and mulches.
- Revegetate slopes, sediment basins, roads, disturbed areas, stockpiles, equipment storage and office areas, and other areas of bare soil to prevent erosion.
- Address controllable factors such as alterations to natural hydrologic conditions.

⁸ Disposal of treated groundwater will require obtaining the necessary permits.

- Account for any operational or structural changes implemented during the life of the project.

Comment 2, Page 2:

“Modify conditions 2.18 and 13.9 of Sections 2 and 13 respectively to be consistent with roles and responsibilities in SMARA regarding reclamation monitoring. It may be advisable to specify that the WDR monitoring requirements are independent of mine reclamation status. The Regional Water Board may desire to end the WDR sooner, prior to reclamation, once the site has sufficient vegetative cover for erosion control and is otherwise determined to pose little threat to water quality.”

Response 2:

The third and fourth paragraphs of condition 2.18 in Section 2 and condition 13.9 of the Draft Order have been revised to address the comment and make the language consistent with revisions and supporting rationale described in Responses 1 and 3 concerning the submittal of a water quality plan and continuing implementation of the plan until Order rescission. The revisions are as follows:

2.18. (3rd paragraph) Upon the completion of mining operations, final reclamation will proceed including the removal of all equipment and facilities. This includes finishing the slopes and benches, ripping the operations area, placing any excess overburden material throughout the quarry site, and reshaping and rounding cut slopes. Overburden or native material would be used to develop the final side slopes of the pit slopes and the pit floor to ensure successful revegetation. The quarry floor will be scarified and covered with topsoil, and hydroseeded with erosion-control grass mixture. All areas will be graded as necessary to ensure positive drainage to the appropriate on-site collection system. Resoiling of the final graded areas will be done using the stockpiled topsoil material. Any excess topsoil will be spread throughout the quarry site prior to planting. The property owner will continue to maintain and monitor the reclaimed areas per the approved Reclamation Plan.

~~The property owner will continue to maintain and monitor the reclaimed areas for a period of five years following re-vegetation. After the five-year maintenance period, Prior to the initiation of Phase 3, a water quality plan will be submitted to the Regional Water Board’s Executive Officer for approval. The plan will be implemented per the schedule in the plan. After final reclamation, the rescission of this Order will be considered only after any outstanding impacts to water quality are adequately controlled at the site. will determine whether the maintenance period will be extended beyond five years.~~

Section 13.9 of the Draft Order has been revised and renumbered as follows:

~~13.9-13.7. The reclamation maintenance program ends five years after reclamation is completed and after all reclamation plan objectives are met. The Discharger shall then~~

~~obtain written concurrence from the Regional Water Board's Executive Officer to terminate continue to implement the reclamation maintenance program water quality plan approved by the Regional Water Board's Executive Officer as required in Section 13.10 until this Order is rescinded. All maintenance work shall be conducted during September and October and shall be completed prior to October 15th of each year. The annual maintenance inspections shall be conducted by the property owner prior to September 15 each year, and recorded onto logs. These routine inspections shall include repairing the irrigation system if needed, erosion control work, fence repair, and sediment removal from ditches, swales and the sediment basin.~~

Comment 3, Page 2:

“Update individual Enforceable Conditions within Section 13, Site Reclamation, to be deferential to the approved Reclamation Plan, or combine Enforceable Conditions related to reclamation (13.1 through 13.12) to specify that the site will be operated and reclaimed in substantial conformance with an approved Reclamation Plan. This will allow for appropriate review and updates to mine operations and reclamation plans without creating conflict with the WDR.”

Response 3:

Regional Water Board staff agree with this suggestion and have removed conditions 13.3 and 13.4 of Section 13 and revised the language in conditions 13.6, 13.7, 13.9, and 13.12 of the Draft Order. Staff have also added a condition to the Draft Order, which is now condition 13.11 in the Proposed Order.

Conditions 13.3 and 13.4 have been removed from the Draft Order and language in conditions 13.7, 13.9, and 13.12 has been revised because the conditions are too specific regarding actions that will be taken at the end of quarry operations. Instead, the Discharger is required to submit a water quality plan to the Regional Water Board's Executive Officer a minimum of 180 days prior to Phase 3 of operations and final reclamation per the revisions to condition 13.10 of the Proposed Order. The water quality plan will address which parts of the facility infrastructure will be removed, restored, or left in place, how water quality will be protected including controlling sources of erosion, and how other controllable factors affecting water quality and the natural hydrologic conditions at the site will be addressed in final reclamation.

The language in condition 13.5 of the Draft Order (condition 13.3 of the Proposed Order) has been revised to remove the objective for survival of vegetation because revegetation requirements are already covered by the Clean Water Act Section 401 permit, as shown below.

The language in conditions 13.6 and 13.9 of the Draft Order (conditions 13.4 and 13.7 of the Proposed Order) has been revised, as shown below, to require maintenance until the Order is rescinded. The set time period of five years has been removed to ensure

any outstanding impacts to water quality are adequately controlled at the site prior to this Order being rescinded, which may require maintenance surpassing five years.

Condition 13.11 has been added to the Proposed Order, as shown below, to require compliance with the current approved Reclamation Plan and the water quality plan. This allows flexibility for the Reclamation Plan to be updated without approval from the Regional Water Board Executive Officer, while still requiring compliance with the current version approved by Sonoma County and the water quality plan required in Section 13.10.

The conditions in Section 13 have been renumbered as a result of the removal of conditions 13.3 and 13.4. With the addition of the new condition 13.11, there are now 11 conditions total in Section 13 of the Proposed Order. The complete Section 13 including all revisions is shown below:

13 SITE RECLAMATION

13.1. Prior to reclamation of the quarry, appropriate sampling and testing shall be performed to identify any sources of soil contamination. If soil contamination is identified, then an appropriate remediation plan shall be developed prior to closing out the quarry operation, including obtaining any necessary permitting for site clean-up.

13.2. After all the equipment and buildings have been removed from the operations area, and prior to placement of topsoil and replanting, the operations area shall be ripped to loosen the area from excessive compaction and scarified prior to finish grading and replanting.

~~13.3. All drainage facilities shall be left in place including the Surface Water Runoff Collection Ditch, drainage structures and pipes located on the quarry face, the north and south slope interceptor trenches located along the perimeter of the quarry floor, and all three sediment basins.~~

~~13.4. Any sediment shall be removed from the remaining ditches, trenches, and basins and the basins shall be planted.~~

~~13.5. 13.3 Reclamation erosion control shall consist of protecting all exposed surfaces with effective and adequate combinations of BMPs including permanent seeding and mulching, hydroseeding, placement of erosion control blankets on exposed surfaces, fiber rolls on slopes, silt fences along edges of swales where appropriate, tree planting on the quarry floor and quarry benches, and a stabilized entrance at the end of the paved access road. The objective for survival of vegetation is an 80% survival rate.~~

~~13.6 13.4. Monitoring and maintenance of the drainage facilities shall be performed until this Order is rescinded for a period of 5 years after reclamation is completed.~~ The Discharger shall immediately notify the Regional Water Board of any flooding, slope failure, or other change in site conditions which could impair the integrity of the control measures.

~~13.7. 13.5. All disturbed areas shall be graded to flow into the site and toward sedimentation ponds. Side casting shall be avoided. The topsoil and overburden mounds shall be protected from erosion by straw covering and hydro-mulching prior to October 1.~~

~~13.8. 13.6. Reclamation or stabilization of all quarry slopes and the quarry floor (excluding the working/processing/stockpile/loading/access areas) shall be completed by October 1 of each year.~~

~~13.9. 13.7. The reclamation maintenance program ends five years after reclamation is completed and after all reclamation plan objectives are met. The Discharger shall then obtain written concurrence from the Regional Water Board's Executive Officer to terminate continue to implement the reclamation maintenance program water quality plan approved by the Regional Water Board's Executive Officer as required in Section 13.10 until this Order is rescinded. All maintenance work shall be conducted during September and October and shall be completed prior to October 15th of each year. The annual maintenance inspections shall be conducted by the property owner prior to September 15 each year, and recorded onto logs. These routine inspections shall include repairing the irrigation system if needed, erosion control work, fence repair, and sediment removal from ditches, swales and the sediment basin.~~

~~13.10. 13.8. During the rainy season, October 15th - April 30th, the sediment basins shall be inspected weekly. Year-round, following rainfall events greater than 1-inch in 24 hours, the site shall be inspected for significant erosion and sediment control problems. Inspection must include, at a minimum, excavated slopes, drainage ditches, swales, culverts, and sediment basins.~~

~~13.11. 13.9. The Discharger shall have the continuing responsibility to assure protection of waters of the state from discharged wastes that may be generated and discharged during the reclamation process, and post-reclamation maintenance period of the facility as long as the Discharger maintains ownership of the property or remains an operator.~~

~~13.12. 13.10. The Discharger shall submit an updated Reclamation Plan a water quality plan for final reclamation to the Regional Water Board's Executive Officer for approval a minimum of 180 days prior to the initiation of Phase ~~3~~ of quarry operations. The Discharger shall not initiate Phase 3 operations prior to the Executive Officer's approval of the plan. The water quality plan shall be consistent with current Reclamation Plan and include additional water quality protection measures as needed to meet the following objectives: The updated Reclamation Plan must account for any operational or structural changes implemented during the life of the project.~~

- Prevent and minimize discharges of waste to Americano Creek and Ranch Tributary.
- Control sources of erosion to eliminate discharges to surface waters.

- Stabilize storm water outfalls, sediment pond spillways, soil stockpiles, and other artificial features that will remain post-quarry closure.
- Treat and properly dispose of groundwater seeping into the quarry pit that does not meet water quality objectives.⁸
- Promote revegetation through the application of topsoil and mulches.
- Revegetate slopes, sediment basins, roads, disturbed areas, stockpiles, equipment storage and office areas, and other areas of bare soil to prevent erosion.
- Address controllable factors such as alterations to natural hydrologic conditions.
- Account for any operational or structural changes implemented during the life of the project.

13.13. 13.11. The site shall be operated and reclaimed in conformance with the approved Reclamation Plan as described in Section 2.18 and the water quality plan described in Section 13.10.

⁸Disposal of treated groundwater will require obtaining the necessary permits.

Comment 4, page 3:

“Permit Sonoma recommends the Draft WDR specify coordination between the RWQCB with Permit Sonoma and Sonoma County Water Agency in the review of hydrologic monitoring data and reports, and in determination that significant changes to streamflow or hydrologic conditions have occurred. Coordination could be specified generally or in Enforceable Conditions 11.1 and 12.1.”

Response 4:

Regional Water Board staff agree with the suggestion and have added language to findings 2.17 and 2.26 of the Draft Order. The new language describes the coordination that will take place between the Regional Water Board, Permit Sonoma, and the Sonoma County Water Agency and is shown below in the context of the entire finding:

2.17 Potential Impact on Americano Creek and Ranch Tributary Flows

Storm water runoff accounts for the majority of surface flow in the Ranch Tributary, but the baseflow (flow that is not directly attributable to a storm event) is supplied by the water-bearing sediments in the Wilson Grove Formation and the upper fractured portion of the underlying Tolay Volcanics. The proposed quarry would eliminate an area of approximately 65 acres, including altering approximately 30 percent of the Ranch Tributary watershed and reducing the area of groundwater storage. Due to these landscape level alterations, it is likely that the drainage and groundwater seepage within the watershed would decrease. Reduced baseflow in a small tributary watershed could have negative biological implications, such as the seasonal reduction of groundwater and surface water available to the riparian area. Further, a reduction in Ranch Tributary

flows to Americano Creek during the low flow period of summer and early fall may adversely affect important aquatic habitat parameters such as water depth, velocity, and temperature in the downstream areas occupied by special-status fish species.

The diversion of storm water runoff to Ranch Tributary via the Surface Water Collection Ditch, removal of Wilson Grove overburden material, and exposure of bedrock could increase the amount of storm water runoff leaving the site and increase peak flows in Ranch Tributary and Americano Creek. The additional flows caused by the project could lead to downstream flooding and excessive bank erosion. This may lead to degradation of the existing aquatic habitat quality in Ranch Tributary or Americano Creek.

This Order requires the discharger to implement a baseline flow and creek stage monitoring program for Ranch Tributary and Americano Creek and ~~a drainage plan~~ submit an updated hydrology study assessing changes to site drainage through the phases of quarry development and post-reclamation to ensure storm water flow entering Ranch Tributary and Americano Creek do not exceed pre-project baseline flows during the 2-, 10-, 25-, 50- and 100-year storm events. Regional Water Board staff will coordinate with Permit Sonoma and the Sonoma County Water Agency in the review of data generated as part of the flow and creek stage monitoring program and in the determination of whether significant changes to baseflow or peak flows has occurred and consideration of potential corrective actions.

2.26 Monitoring

Water Code sections 13383 and 13267 authorizes the Regional Water Board to require technical and monitoring reports. This Order requires that all monitoring wells and water supply wells be tested for possible chemical contaminants on a regular basis. If chemicals are detected in concentrations exceeding those stipulated in this Order, the Discharger will be required to treat all contaminated water to specified standards stipulated in this Order, prior to any onsite use. A groundwater level monitoring and adaptive management program will be implemented when the project begins to pump groundwater for quarry operations from onsite wells. Regional Water Board staff will coordinate with Permit Sonoma and the Sonoma County Water Agency in the review of data generated from the monitoring of groundwater wells and in the determination of whether a measurable declining trend in static water levels has occurred as a result of pumping at wells DW-1 and DW-2.

Comment 5, Page 3:

“Enforceable conditions related to stockpiles (7.1 through 7.6) could be combined to require substantial compliance with the approved Reclamation Plan and applicable County approved grading plan.”

Response 5:

Much of Section 7 is needed for the protection of water quality during reclamation activities and ongoing operations. Regional Water Board staff have revised condition 7.2 as shown below:

7.2. Where overburden materials are placed on underlying supporting slopes steeper than 6:1, the fill area shall be prepared by constructing horizontal benches into firm natural soil or rock. ~~The benches must be at least eight feet in width, with a step of at least four feet between benches.~~

Comment 6, Page 4:

“Enforceable conditions related to fugitive dust (10.11 through 10.19) could be combined to require substantial compliance with the Comprehensive Dust Control Program approved by the County.”

Response 6:

Many of the conditions in Section 10 are needed for the protection of water quality as airborne dust has the potential to be deposited into nearby receiving waters and dust/sediment on the roadways has the potential to be delivered during rain events. Regional Water Board staff agree that some of the language in Section 10 of the Draft Order can be removed and in response have removed several conditions and renumbered the Section. With the removed conditions, there are now 19 total conditions in Section 10 of the Proposed Order.

Conditions 10.11, 10.16, 10.17, and 10.19 of the Draft Order have been removed because staff determined they were unnecessarily specific. Conditions 10.4 and 10.5 have been revised to allow for greater flexibility for the Discharger to select alternative BMPs where they ensure equal or better protection from erosion. The Discharger is already required to develop a comprehensive dust and erosion control program in condition 10.1, and these revisions allow for flexibility to better control dust and erosion based on site conditions and the risk of direct or indirect discharge to surface waters.

The revisions to conditions 10.04 through 10.19 of the Draft Order are shown below:

10. STORM WATER MANAGEMENT AND EROSION AND SEDIMENT CONTROL

- 10.4 In areas not being actively mined, bare soil shall be protected from erosion with the application of hydraulic mulch or hydroseeded, or other BMPs that ensure equal or greater protection from erosion.
- 10.5 In areas requiring temporary protection until a permanent vegetative cover can be established, bare soil shall be protected from erosion by the application of straw mulch, wood mulch, ~~or~~ mats, or other BMPs that ensure equal or greater protection from erosion.

- 10.6 Benches shall drain into adequately sized pipes or rock-lined channels that convey the runoff to the quarry floor. Outlets of pipes shall have appropriate energy dissipaters to prevent erosion at the outfall.
- 10.7 The applicant shall install sediment retention measures prior to October 15.
- 10.8 Silt fences, fiber rolls, and straw bale barriers shall be used on bare slopes no longer being actively mined to intercept and trap sediment carried by sheet flow.
- 10.9 Fueling and maintenance of all rubber-tired loading, grading and support equipment shall be prohibited within 100 feet of drainage ways. Fueling and maintenance activities associated with other less mobile equipment shall be conducted with proper safeguards to prevent hazardous materials releases. All refueling and maintenance of vehicles and mobile equipment shall take place in a designated area with an impervious surface and berms to contain any potential spills.
- 10.10 If surface water monitoring indicates discharges from the quarry site are occurring in violation of Discharge Prohibition 3.10, the applicant shall revise the SWMP adding BMPs where needed to eliminate the source of the discharge.
- ~~10.11. Water or other dust palliative shall be applied to stockpiles of soil as needed to control dust.~~
- ~~10.12.~~ 10.11. Water shall be applied to all active unpaved vehicle circulation areas daily, using reclaimed water whenever possible. Watering should be sufficient to prevent airborne dust from leaving the site. Increased watering frequency shall be applied whenever wind speeds exceed 15 miles per hour during dry conditions.
- ~~10.13.~~ 10.12. Excavation activity shall be suspended when winds (instantaneous gusts) exceed 25 miles per hour during dry conditions.
- ~~10.14.~~ 10.13. All quarry-operated trucks hauling soil, sand, and other loose materials shall be covered or otherwise required to maintain at least two feet of freeboard.
- ~~10.15.~~ 10.14. Paved roadways shall be swept (with water sweepers using reclaimed water if possible) at the end of each day if visible soil material is carried onto adjacent paved roads.
- ~~10.16. Inactive exposed soil areas shall be hydroseeded or have soil stabilizers applied.~~
- ~~10.17. Exposed soil stockpiles shall be enclosed, covered, watered daily or treated with a (non-toxic) soil stabilizer.~~

~~10.18.~~ 10.15. Wheel washers or other washing method (e.g., water sprayers or use of a water depression crossing) shall be installed so that that tires or tracks of all exiting trucks leaving the site are cleaned of dirt and gravel to minimize tracking these materials onto public roads.

~~10.19. The quarry's crushers shall be covered to minimize fugitive dust during crushing operations.~~

Staff Initiated Changes

Staff have made the following revisions in the Proposed Order to clarify requirements:

Revision 1, pg. 23:

Language has been added to permit condition 9.1 to clarify that the Infiltration/Irrigation Field Management Plan shall be implemented according to a schedule defined in the plan until the Order is rescinded. The following revisions clarifies the intention of plan development followed by implementation until the Order is rescinded.

9.1. The ~~d~~Discharger shall submit an Infiltration/Irrigation Field Management Plan to the Regional Water Board's Executive Officer for approval prior to commencement of Phase 1. The Discharger shall implement the plan per the approved schedule of implementation until this Order is rescinded. The plan shall include the following information:

- Locations and design of the infiltration/irrigation fields including the design details for the subsurface 'infiltration fields' that use infiltration trenches and the surface 'irrigation fields' that use spray irrigation.
- Maximum flow rates for the disposal of wastewater from the sediment control basins based on site characteristics.
- A description of the conditions under which new infiltration/irrigation fields will be constructed to accommodate increased runoff and seepage rates that will result in additional discharge volumes from the sediment control basins as the quarry footprint is expanded.

Revision 2, pg. 28:

The requirement to submit a workplan has been added to permit condition 12.1 to ensure that any trend in static water levels that is identified in coordination with Permit Sonoma and the Sonoma County Water Agency is addressed in a timely manner to return static water levels to pre-project levels. The newly added language is as follows:

12.1. If pumping at Well DW-1 or DW-2 results in a measurable declining trend of static water levels, adaptive management strategies shall be employed including short term (e.g. alteration of pumping schedule, reduced pumping,

decreased water use, changes in overall water management strategies or temporary cessation of pumping) or long term corrective measures until the groundwater levels in onsite wells are shown to recover to pre-project pumping conditions. If a declining trend in water levels is detected, Regional Water Board staff will coordinate with Permit Sonoma and the Sonoma County Water Agency to identify corrective actions and notify the Discharger. The Discharger shall submit a workplan to the Regional Water Board for approval within 90 days of receiving notification. The workplan shall identify the corrective actions necessary to recover static groundwater levels to pre-project levels and a schedule for implementation. The Discharger shall implement the corrective actions per the schedule.

Revision 3, pg. A-4, Table A-2:

The following text has been added to footnote #3 referenced in Table A-2 to clarify sample frequency and correct terminology:

- ³ Groundwater extracted from Wells DW1 and DW-2 shall be sampled and analyzed at least once every 24hours for up to ten days during periods of sustained or cyclic pumping (until a suitable trend of water quality ~~standards~~ parameters is established), and at the end of each pumping episode during times of intermittent use of the well (intermittent use means pumping episodes separated by more than 24 hours).

Revision 4, pg. 15:

Text has been added to Finding 2.27 to clarify the reference to the installation of additional monitoring wells required by the Order:

2.27 Installation of Additional Monitoring Wells

In February 2011, the Discharger developed and submitted a work plan for the installation of groundwater monitoring wells MW-5, MW-6, MW-7, MW-9, MW-9, and MW-10. This Order requires the installation of the wells described in the work plan and additional monitoring wells, MW-XX and MW-YY, shown in Table A-1. The additional wells are needed to:

- Further characterize groundwater at the site including potential changes in groundwater levels, groundwater gradients, and/or water quality resulting from quarry operations.
- Assess the potential impact of the construction and operation of the quarry on baseflows in Americano Creek and Ranch Tributary.
- Assess the impact of wastewater discharges to the infiltration/irrigation on constituents of concern in groundwater.

The data collected during the construction and monitoring of these wells (i.e., lithologic information, results of borehole geophysics and groundwater levels data) will be used to further characterize conditions of the bedrock aquifer beneath the site and also act as an early detection of the migration of groundwater from underneath the landfill site towards the quarry. This permit includes several measures that are required if constituents associated with landfill leachate are detected in the monitoring wells.