Southwest Area
Interim Operating Plan

Coliseum Boulevard Plume Site
Montgomery, Alabama

Submitted By:

Alabama Department of Transportation
1409 Coliseum Boulevard
Montgomery, Alabama

September 2010

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COLISEUM BOULEVARD PLUME SITE
MONTGOMERY, ALABAMA

SUBMITTED BY:

ALABAMA DEPARTMENT OF TRANSPORTATION
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TABLES

FIGURES

LIST OF ABBREVIATIONS

ADEM	Alabama Department of Environmental Management
ALDOT	Alabama Department of Transportation
CBP	Coliseum Boulevard Plume
EFF	Effectiveness Monitoring Wells
IOP	Interim Operating Plan
LTM	Long-Term Monitoring Plan
NPDES	National Pollutant Discharge Elimination System
NMM	North Montgomery Materials, Inc.
POC	Point of Compliance
SWA	Southwest Area
TCE	Trichloroethylene
TSS	Total Suspended Solids
VOCs	Volatile Organic Compounds

1. PURPOSE AND OBJECTIVES

ALDOT is developing a Corrective Measures Implementation Plan (CMIP) for the western part of the Coliseum Boulevard Plume. The anticipated date for submittal of the CMIP is December 31, 2010. This Interim Operating Plan ("IOP") describes the corrective measures that ALDOT is using to manage and maintain hydraulic control of the groundwater in the western part of the CBP.

The corrective measures described herein have been implemented at the site of a former sand and gravel mine located west of Lower Wetumpka Road previously operated by North Montgomery Materials, Inc. (NMM). ALDOT purchased the site, hereinafter referred to as the Southwest Area ("SWA"), in April 2009. (See Figure 1-1). The corrective measures implemented at the SWA, which provide management and control of the western part of the CBP includes:

a. Maintaining hydraulic control of groundwater through pumping at the SWA;

b. Treatment of recovered groundwater to meet NPDES discharge requirements, and;

c. Restricting access to surface water.

1.1. SOUTHWEST AREA DESCRIPTION

The western extent of the CBP generally terminates at the SWA. (See Figure 1-1). From 1998 through 2009, NMM mined sand and gravel by excavating to depths below the groundwater table. Dewatering of the excavation(s) by pumping lowered the water table to facilitate removal of sand and gravel deposits. Ponds formed in abandoned excavations from groundwater seepage and stormwater. During its investigations, ALDOT discovered that the rate and direction of groundwater flow in the CBP was influenced by the dewatering operations at the SWA, and ALDOT determined through modeling that groundwater in the western part of the CBP can be controlled by continued, managed pumping at the SWA.

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COLISEUM BOULEVARD PLUME
SOUTHWEST AREA CONCEPTUAL SITE MODEL

SOUTHWEST CORRECTIVE MEASURES AREA

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Figure 1-1

2. SOUTHWEST AREA CORRECTIVE MEASURES

2.1. Interim Operating Plan

Pending submittal of the CMIP, ALDOT will continue to manage the SWA in accordance with the procedures outlined herein.

2.1.1. HYDRAULIC CONTROL FEATURES

Hydraulic control in the western part of the CBP is accomplished by management of water levels in the Dewatering Pond at the SWA, and maintaining the intermediate ponds and water conveyance system. (See Figure 2-1). The hydraulic control layout for the interim operations is described below:

- Dewatering Pond: Groundwater in the western part of the CBP is captured by designed pumping at the Dewatering Pond. Prior to implementation of the final CMIP, the water level in the Dewatering Pond will be maintained at or near 120 ft MSL. Water from the Dewatering Pond is pumped to the Transfer Pond.

- Transfer Pond: The Transfer Pond is a two-cell pond used to provide flow equalization and primary treatment and settling of solids in water pumped from the Dewatering Pond. Water from the Transfer Pond is pumped to the South Pond for additional retention and treatment prior to discharge.

- Settling Basin / Settling Pond: The two-cell Settling Basin and Settling Pond is not part of the ordinary groundwater/surface water conveyance sequence. However, the water conveyance piping from the Transfer Pond to the South Pond is fitted with a T-valve that will allow water diversion to the Settling Basin if additional treatment is required. Water flow from the Settling Basin and Settling Pond gravity flows back to the Transfer Pond. (See Figure 2-1).

- South Pond: The South Pond is a two-cell pond, used for final treatment prior to discharge to the NPDES-permitted

outfall. Wetland vegetation in the South Pond provides treatment.

2.1.2. HYDRAULIC CONTROL SYSTEM MONITORING

ALDOT monitors the dewatering system and maintains operational records to evaluate the efficiency and effectiveness of corrective measures for the SWA. Operational monitoring includes:

- Periodic measurement of sediment accumulation in the Dewatering Pond and Transfer Pond to determine when sediment removal is needed to maintain appropriate operating water levels.
- Measurement of water levels in the Dewatering Pond, Transfer Pond, and South Pond using staff gauges.
- Measurement of groundwater levels using a water level indicator during routine monitoring events in the following monitoring wells and piezometers: PZ-18, PZ-19, PZ-20, PZ-21R, MW-260, MW261, MW-262, MW-263, MW-264, MW-265. (See Figure 2-1).
- Recording daily rainfall totals.

2.1.3. SITE SECURITY

The boundary of the SWA is secured with a chain-link security fence with locking gates.

Department Of Transportation	**COLISEUM BOULEVARD PLUME** **SOUTHWEST AREA CONCEPTUAL SITE MODEL** **HYDRAULIC CONTROL AND MONITORING SYSTEM AT THE SOUTHWEST CORRECTIVE MEASURES AREA**	Sept 2010 Figure 2-1

3. PERMITS AND SCHEDULE

3.1. PERMIT REQUIREMENTS

The NPDES permit (AL0071790) issued to the former owner/operator of the mining operation at the SWA (i.e., NMM) has been transferred to ALDOT. An application for renewal of that permit will be submitted to ADEM by December 31, 2010.

ALDOT has received a permit from the United States Army Corps of Engineers for work within wetland areas on the SWA (e.g., construction of security fence and a perimeter access road).

In accordance with Alabama Department of Industrial Relations (ADIR) requirements, the existing ponds on the SWA will be designated "Industrial" for use as components of the SWA corrective measures. Incident to reclamation, ALDOT is currently stabilizing slopes and will re-vegetate the remaining disturbed areas using permanent native grasses and trees.

3.2. EROSION AND SEDIMENT CONTROL

ALDOT will comply with established guidelines for erosion and sediment control, including:

- General Requirements for Erosion and Sediment Control on ALDOT Projects;
- ADEM Administrative Code R. 335-6-12; and,
- Alabama Handbook for Erosion Control, Sediment Control and Stormwater Management on Construction Sites and Urban Areas.

4. SOUTHWEST AREA MONITORING

4.1. SURFACE WATER MONITORING

ALDOT will continue monitoring required by the NPDES permit, plus voluntary additional monitoring for VOCs. Corrective measure effectiveness will be monitored at the following SWA sites (see Figure 4-1 and Table 4-1):

- SA-1: Dewatering Pond
- SA-2: Transfer Pond
- SA-3: Discharge to South Pond from Transfer Pond
- SA-4: Between cells 1 and 2 of the South Pond prior to the NPDES permitted outfall DSN001
- SA-5: Discharge at the Montgomery Flood Gate (downstream of the permitted outfall in the Southwest).

The referenced sites will be sampled monthly from January 1, 2010, through December 31, 2010, and quarterly thereafter.

Table 4-1

Surface Water Sample Locations

Surface Water Compliance Locations	Analyte List	Monitoring Schedule
DSN001	pH, TSS, flow (est.), O&G	Semimonthly
	VOCs	Monthly
DSN002	pH, TSS, flow (est.), O&G	Semimonthly
Surface Water Effectiveness Monitoring	**Analyte List**	**Monitoring Schedule**
SA-1: Dewatering Pond	pH, TSS, flow (est.), VOCs	Monthly[1]
SA-2: Transfer Pond	pH, TSS, VOCs	Monthly[1]
SA-3: Discharge to South Pond from Transfer Pond	pH, TSS, flow (est.), VOCs	Monthly[1]
SA-4: Between Cells 1 and 2 of South Pond	pH, TSS VOCs	Monthly[1]
SA-5: Discharge at the Flood Gate (downstream of permitted outfall DSN001)	pH, TSS, flow (est.), O&G, VOCs	Monthly[1]

[1]Sample frequency may be modified following the one year review of data collected, and any modification will be reported to ADEM for review and approval.

COLISEUM BOULEVARD PLUME
SOUTHWEST AREA CONCEPTUAL SITE MODEL
SURFACE WATER MONITORING AND COMPLIANCE POINTS
FOR THE SOUTHWEST CORRECTIVE MEASURES AREA

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Figure 4-1

4.2. COMPLIANCE POINT MONITORING

NPDES compliance point samples are collected at the two permitted NPDES outfalls at the SWA. Outfall DSN001 is in the southern portion of the SWA and receives water from the Dewatering Pond and treatment operation. Outfall DSN002 is in the northwestern part of the SWA and does not receive water from the Dewatering Pond and treatment operation.

The NPDES permit requires semi-monthly samples for total suspended solids, pH, flow, and oil and grease. Flow measurements are also required. In additional to the permit-required samples, ALDOT is collecting monthly samples from DSN001 for analyses of volatile organic compounds (VOCs). The ADEM Water Division will review the renewal application for the NPDES permit and establish TCE discharge limits.

4.3. GROUNDWATER MONITORING

Groundwater monitoring in the SWA is included in the Long-Term Monitoring Plan (LTM) for the CBP. Groundwater monitoring in the SWA will include Effectiveness Monitoring Wells (EFF) and Boundary monitoring wells.

Measured groundwater elevations will be compared to model-simulated elevations to verify capture of the western portion of the CBP by the dewatering system. Based on data review and evaluation, the corrective measure program may be modified. A site-wide model verification review will be conducted at five (5) year intervals as part of the LTM. Data will be used to verify the site-wide model, evaluate the effectiveness of the corrective measures, and evaluate the hydraulic control system. Additionally, ALDOT will evaluate the need to update the model based on the following event(s):

- Identification of a previously unknown and active residential, commercial, or industrial well.

- A change in dewatering operations of nearby mines, or any other event that may significantly affect groundwater flow and CBP movement.

Any proposed modification to the dewatering and treatment system will be submitted to ADEM for approval.

4.4. REPORTING

Results of SWA corrective measures effectiveness monitoring will be submitted in the CBP Status Reports. Discharge Monitoring Reports required by the NPDES permit are submitted to ADEM Quarterly.