

# Drawing 2 of 3 OPERATIONAL PLAN

RE NOISE CONTROLS, AERCOUSTICS ENGINEERING LIMITED, 10 JULY 2014

- ANY PROPOSED CHANGES TO THE EXTRACTION AND PROCESSING OPERATIONS RELATING TO NOISE CONTROL SHALL BE REVIEWED BY A QUALIFIED ACOUSTICAL CONSULTANT FOR COMPLIANCE WITH THE RELEVANT NOISE CRITERIA.
- THE EXTRACTION, PROCESSING AND SHIPMENT EQUIPMENT IS LIMITED TO 2 EXTRACTION LOADERS, 2 SHIPMENT LOADERS, 1 PROCESSING PLANT OR 1 CONCRETE RECYCLING PLANT, 20 OFF-HIGHWAY TRUCK TRIPS/HR (40 PASSES/HR) AND 30 HIGHWAY TRUCK TRIPS/HR (60 PASSES/HR).
- THE PIT EQUIPMENT SHALL SATISFY THE FOLLOWING NOISE LEVELS LISTED:

EQUIPMENT	REFERENCE SOUND PRESSURE LEVEL AT 30M (DBA)
PORTABLE PROCESSING PLANT (CRUSHING, SCREENING & WASHING)	66
ENCLOSED PORTABLE PROCESSING PLANT	85 (LOUD SIDE) / 72 (QUIET SIDE)
EXTRACTION/SHIPMENT LOADER	70 / 67
OFF-HIGHWAY TRUCK - 20 KM/HR	75
HIGHWAY TRUCK - 25 KM/HR	66

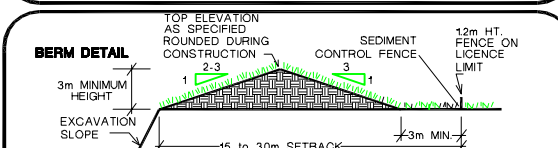
- THE SHIPMENT LOADERS WERE ASSUMED TO OPERATE AT A 50% DUTY CYCLE.
- ONLY ONE PROCESSING PLANT OR A CONCRETE RECYCLING PLANT CAN OPERATE AT ANY TIME.
- CONSTRUCT REQUIRED BERMS PRIOR TO EXTRACTION IN EACH STAGE TO ELEVATIONS SHOWN. BERMS WILL REMAIN UNTIL ALL EXTRACTION AND PROCESSING HAS CEASED.
- THE SOUND EMISSIONS OF ALL CONSTRUCTION EQUIPMENT INVOLVED IN SITE PREPARATION AND REHABILITATION ACTIVITIES SHALL COMPLY WITH THE SOUND LEVEL LIMITS SPECIFIED IN MOECC PUBLICATION NPC-115 "CONSTRUCTION EQUIPMENT".

- STAGE 1:**
- THE PORTABLE PROCESSING PLANT SHALL BE LOCATED IN THE STAGE 1 LANDS AS SHOWN. THIS AREA SHALL BE EXTRACTION AS EARLY AS POSSIBLE TO A FINAL PIT FLOOR ELEVATION OF 475 M.
  - THE SHIPMENT TRUCK HAUL ROUTE SHALL BE CONSTRUCTED IN A CUT SUCH THAT THE ROAD SURFACE IS A MINIMUM OF 3 M BELOW THE EXISTING GRADE.
  - AN 11 M HIGH LOCAL ACOUSTIC BARRIER MUST BE LOCATED WITHIN 30 M OF THE PLANT EQUIPMENT IN THE DIRECTION FACING R01, R02, R17 AND R18.

- STAGE 2:**
- THE PROCESSING PLANT SHALL BE MOVED TO STAGE 2 AS SHOWN. THIS PLANT SHALL BE PLACED IN AN ENCLOSURE BUILT WITH ISO CONTAINERS PRIOR TO PROCESSING MATERIAL IN THE STAGE 2 LANDS. THE QUIET SIDE OF THE ENCLOSURE MUST FACE RECEPTOR R02 SUCH THAT THE OPENINGS ARE ORIENTED IN A NORTHWEST AND SOUTHEAST DIRECTION (PROJECT NORTH OR SOUTH). EXTRACTION IN THE STAGE 2 LANDS MAY OCCUR PRIOR TO MOVING THE PROCESSING PLANT FROM THE STAGE 1 TO THE STAGE 2 LANDS.
- STAGE 3:**
- EXTRACTION TO PROCEED IN THE DIRECTION OF R02 WITH EXTRACTION LOADERS WITHIN 30 M OF THE WORKING FACE. THE WORKING FACE SHALL HAVE A MINIMUM HEIGHT OF 7 M.

- STAGE 4:**
- EXTRACTION TO PROCEED IN THE DIRECTION OF R09 WITH EXTRACTION LOADERS WITHIN 30 M OF THE WORKING FACE. THE WORKING FACE SHALL HAVE A MINIMUM HEIGHT OF 7 M. NO EXTRACTION SHALL OCCUR WITHIN 200 M OF THE 17TH LINE RIGHT OF WAY AS SHOWN.

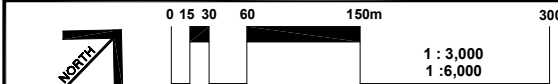
AIR QUALITY AND NATURAL ENVIRONMENT RECOMMENDATIONS ARE INCLUDED ON DRAWING 3.



PROJECT:	TRIEG
DRAWN:	T.M.L. [On Autocad]
CHECKED:	R.J.L.
PLOTTED:	19 OCTOBER 2015

AMENDMENT NO.	
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No.	DATE	DESCRIPTION	APP'D
AMENDMENTS			



**LEGEND**

- BOUNDARY OF AREA TO BE LICENSED STEEL MARKER POSTS
- BOUNDARY OF AREA TO BE EXCAVATED
- EXCAVATION SETBACK AND WIDTH
- EXISTING 1m CONTOURS
- EXISTING SPOT ELEVATIONS
- EXISTING TREE COVER
- EXISTING TREE
- EXISTING WATERCOURSE
- EXISTING SURFACE DRAINAGE
- EXISTING BUILDING AND USE
- EXISTING MONITORIS, STANTEC 2010 & GROUNDWATER SCIENCE CORP. 2014
- LOCATION OF CROSS SECTIONS
- LOCATION OF SITE ENTRANCE
- PROPOSED SCREENING BERM, MINIMUM TOP ELEVATION
- 1ST LIFT ELEVATION, STAGE 2 & 3
- MAXIMUM DEPTH OF EXCAVATION
- APPROXIMATE DIRECTION & SEQUENCE OF EXTRACTION
- MAXIMUM DEPTH OF EXCAVATION, ADJACENT PITS
- RECEPTOR ID & DIRECTION

**NOTES**

- THIS OPERATIONAL PLAN IS BASED UPON EXISTING SITE CONDITIONS AS DESCRIBED ON DRAWING 1.
- AS EXTRACTION IS OPENED, TOPSOIL & SUBSOIL ARE TO BE STRIPPED & STOCKPILED IN SEPARATE SCREENING AND/OR STORAGE BERMS & PRESERVED FOR USE DURING REHABILITATION. WHERE POSSIBLE TOPSOIL AND SUBSOIL STRIPPED FROM CURRENT EXTRACTION AREAS WILL BE PROGRESSIVELY PLACED ON TO AREAS UNDERGOING REHABILITATION. LONG TERM SOIL STOCKPILING AND BERMING WILL BE KEPT TO A MINIMUM.
- SEQUENTIAL OPERATION WILL INVOLVE UP TO TWO LIFTS. MINIMUM HEIGHT OF 1ST LIFT TO BE 7M. LIFTS SHALL BE EXTRACTION IN CLOSE SUCCESSION. LIFT HEIGHT WILL NOT EXCEED STANDARDS AS PRESCRIBED BY THE OCCUPATIONAL HEALTH AND SAFETY ACT REGULATIONS.
- INTERNAL HAUL ROADS WILL BE LOCATED ON THE PIT FLOOR, AS SHOWN AND SHALL BE CONSTRUCTED IN A CUT THROUGH STAGE 4 SUCH THAT THE ROAD SURFACE IS A MINIMUM OF 3M BELOW THE EXISTING GRADE. THE MAIN ROAD ACCESS WILL BE ONTO THE 17TH LINE.
- THE MAXIMUM EXPECTED DEPTH OF EXCAVATION IS TO WITHIN 1.5M OF THE SEASONALLY HIGH WATER TABLE, REPORTED AT 474 - 477.5m.
- DRAINAGE PATTERNS AS PRESENTLY EXIST ARE SHOWN ON DRAWING 1. BECAUSE OF THE DEPTH OF EXCAVATION, ABOUT 50% OF POST EXTRACTIVE DRAINAGE IS EXPECTED TO BE INTERNAL, WITH RECHARGE TO GROUNDWATER. THE REMAINING SURFACE DRAINAGE WILL TRAVEL OVERLAND OFFSITE TO THE NORTH.
- FENCES TO BE POST AND WIRE 1.2m MINIMUM HEIGHT AND LOCATED ON THE LICENCE BOUNDARY. AN INTERNAL FENCE AND LOCKING GATE WILL BE LOCATED ALONG THE BOUNDARY BETWEEN STAGE 1 AND 4 AS SHOWN. NO FENCE IS REQUIRED ALONG THE COMMON BOUNDARIES WITH GREENWOOD LICENSED PITS TO THE SOUTH, WEST AND THE PROPOSED PIT TO THE SOUTH EAST. SEDIMENT CONTROL FENCE WILL BE INSTALLED ON WIRE FENCE WHERE ADJACENT TO BERM CONSTRUCTION. FENCES WILL BE MAINTAINED IN GOOD REPAIR FOR THE DURATION OF THE LICENCE.
- THE EXISTING HOUSE AND SHED WILL BE VACATED AND REMOVED PRIOR TO EXTRACTION WITHIN 30M. THE CRUSHER WILL BE LOCATED WITHIN AN ISO ENCLOSURE LOCATED WITHIN STAGE 2.
- SCREENING & STORAGE BERMS ARE TO BE GENERALLY LOCATED AS SHOWN, COVERED WITH 50mm (2") MINIMUM TOPSOIL, GRADED TO SLOPES OF 3:1. SEEDED & MAINTAINED. SLOPES MAYBE INCREASED TO 2:1 WHERE HIGHER BERMS ARE REQUIRED. MINIMUM BERM HEIGHT IS 3m.
- AGGREGATE STOCKPILES WILL BE LOCATED ON THE PIT FLOOR WITHIN THE CURRENT STAGE. MAXIMUM STOCKPILE HEIGHT IS 15M (50').
- ANY SCRAP GENERATED ON SITE WILL BE STORED WITHIN AN AREA SCREENED FROM THE 17 AND 18TH LINES, NO LARGER THAN 50M X 50M, WITHIN THE CURRENT STAGE, & PERIODICALLY REMOVED.
- REFUELLING WILL TAKE PLACE WITHIN THE CURRENT STAGE. REFUELLING WILL BE PROVIDED BY LICENSED TRUCKS. EQUIPMENT WITH EXTERNAL FUEL TANKS SHALL BE DOUBLE LINED. ALL FUEL STORAGE AND HANDLING WILL BE IN ACCORDANCE WITH THE TECHNICAL STANDARDS AND SAFETY AUTHORITY (T.S.S.A.).
- VEGETATION ON BERMS AND SLOPES WILL BE INSPECTED AND MAINTAINED ON A REGULAR BASIS THROUGHOUT THE GROWING SEASON. AREAS WHICH BECOME DAMAGED OR DISEASED WILL BE REPLACED AS REQUIRED.
- INTERIM SEEDING WILL BE LEGUME-GRASS MIXTURE.
- MATERIAL PROCESSING WILL BE COMPLETED WITHIN STAGES 1 AND 2 USING PORTABLE EQUIPMENT. THIS WILL INCLUDE CRUSHING, SCREENING AND WASH PLANT, LOADERS AND TRUCKS. SITE PREPARATION & REHABILITATION EQUIPMENT MAY INCLUDE BULLDOZERS, EXCAVATORS & SCRAPERS, ETC.
- HOURS OF OPERATION WILL CONSIST OF EXCAVATING, CRUSHING & PROCESSING MONDAY TO FRIDAY 7:00 TO 19:00, LOADING AND SHIPPING MONDAY TO FRIDAY 6:00 TO 19:00 & SATURDAYS 7:00 TO 12:00, EXCLUDING HOLIDAYS.
- MAXIMUM OF 1,000,000 TONNES OF AGGREGATE TO BE REMOVED FROM THE SITE IN ANY CALENDAR YEAR. THIS MAY INCLUDE UP TO 100,000 TONNES OF CONCRETE RECYCLING.

WATER RESOURCES, GROUNDWATER SCIENCE CORP., DECEMBER 2014

- DAILY WATER LEVEL MEASUREMENTS SHALL BE RECORDED AT MW5-14, MW6-14, MW7-14, MW8-14, MW9-14, MW10-14, DP2-13 AND DP3-14, AS ACCESSIBLE, USING DATALOGGERS.
- QUARTERLY MANUAL WATER LEVEL MEASUREMENTS SHALL BE OBTAINED AT MW5-14, MW6-14, MW7-14, MW8-14, MW9-14, MW10-14, DP1-13, DP2-13 AND DP3-14, AS ACCESSIBLE.
- ANNUAL WATER QUALITY SAMPLING SHALL OCCUR AT UP GRADIENT LOCATIONS MW5-14, MW6-14, AND DOWN GRADIENT LOCATIONS MW8-14 AND MW9-14 DURING OPERATIONAL YEARS AND FOR PERIOD OF 2 YEARS AFTER FINAL REHABILITATION HAS OCCURRED. WATER QUALITY ANALYSIS SHALL INCLUDE GENERAL INORGANICS, METALS AND TH.
- IF WASH WATER OPERATIONS ARE OBSERVED TO INTERFERE WITH GROUNDWATER FLOW TO SHAW'S CREEK AT DP2-13 OR THE MARSH/POND AT DP3-14, THEN MITIGATION OPTIONS WOULD BE IMPLEMENTED. MITIGATION OPTIONS INCLUDE A REDUCTION OR CESSATION OF WATER TAKING UNTIL IMPACTS ARE MITIGATED OR THE USE OF A BEDROCK MAKE-UP WELL TO MITIGATE DRAWDOWN WITHIN THE UNCONFINED AQUIFER.
- DURING OPERATIONAL YEARS THE MONITORING DATA SHALL BE SUMMARIZED IN AN ANNUAL REPORT PROVIDED TO THE MINISTRY OF NATURAL RESOURCES AND FORESTRY, CREDIT VALLEY CONSERVATION AND TOWNSHIP OF EAST GARAFRAXA BY MARCH 31ST OF THE FOLLOWING YEAR. THE ANNUAL REPORT WILL INCLUDE A REVIEW OF THE HIGH GROUNDWATER TABLE TO ENSURE THAT THE MAXIMUM DEPTH OF EXCAVATION IS AT LEAST 1.5 M.
- ANY UNUSED WATER WELL WITHIN THE LICENCE BOUNDARY SHALL BE ABANDONED IN ACCORDANCE WITH R.R.O. 1990, REGULATION 303 (WELLS) UNDER THE ONTARIO WATER RESOURCES ACT, PRIOR TO EXTRACTION ACTIVITIES IN THE AREA OF THE WELL.

THE FOLLOWING CONDITIONS RELAYED ON THIS DRAWING BY THE LICENSEE SHALL BE OBSERVED AND MAINTAINED IN ACCORDANCE WITH THE STANDARDS, 1997.

SECTION	CONDITION
5.1 & 5.2	FENCING AND GATES ARE NOT REQUIRED ALONG COMMON BOUNDARIES WITH OTHER LICENSED PITS.
5.11	THE COMPANY WILL ENTER INTO AN AGREEMENT WITH GREENWOOD CONSTRUCTION TO PROVIDE A ZERO SETBACK TO ENABLE EXTRACTION TO COMMON BOUNDARIES.
5.13	AGGREGATE STOCKPILES MAYBE CLOSER THAN 30M FROM COMMON BOUNDARIES WITH ADJACENT LICENSED PITS.

